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THE COTTAGE GARDENER,

AND

COUNTRY GENTLEMAN'S COMPANION.

CONDUCTED BY GEORGE W. JOHNSON, ESQ.

EDITOR OF THE "GARDENER'S ALMANACK," ETC.

THE FRUIT AND FORCING-GARDEN, by Mr. R. Errington, Gardener to Sir P. Egerton, Bart., Oulton Park; and Robert Hogg, Esq., Secretary of the Pomological Society.

THE KITCHEN-GARDEN, by Mr. J. Robson, Gardener to the late Earl Cornwallis; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

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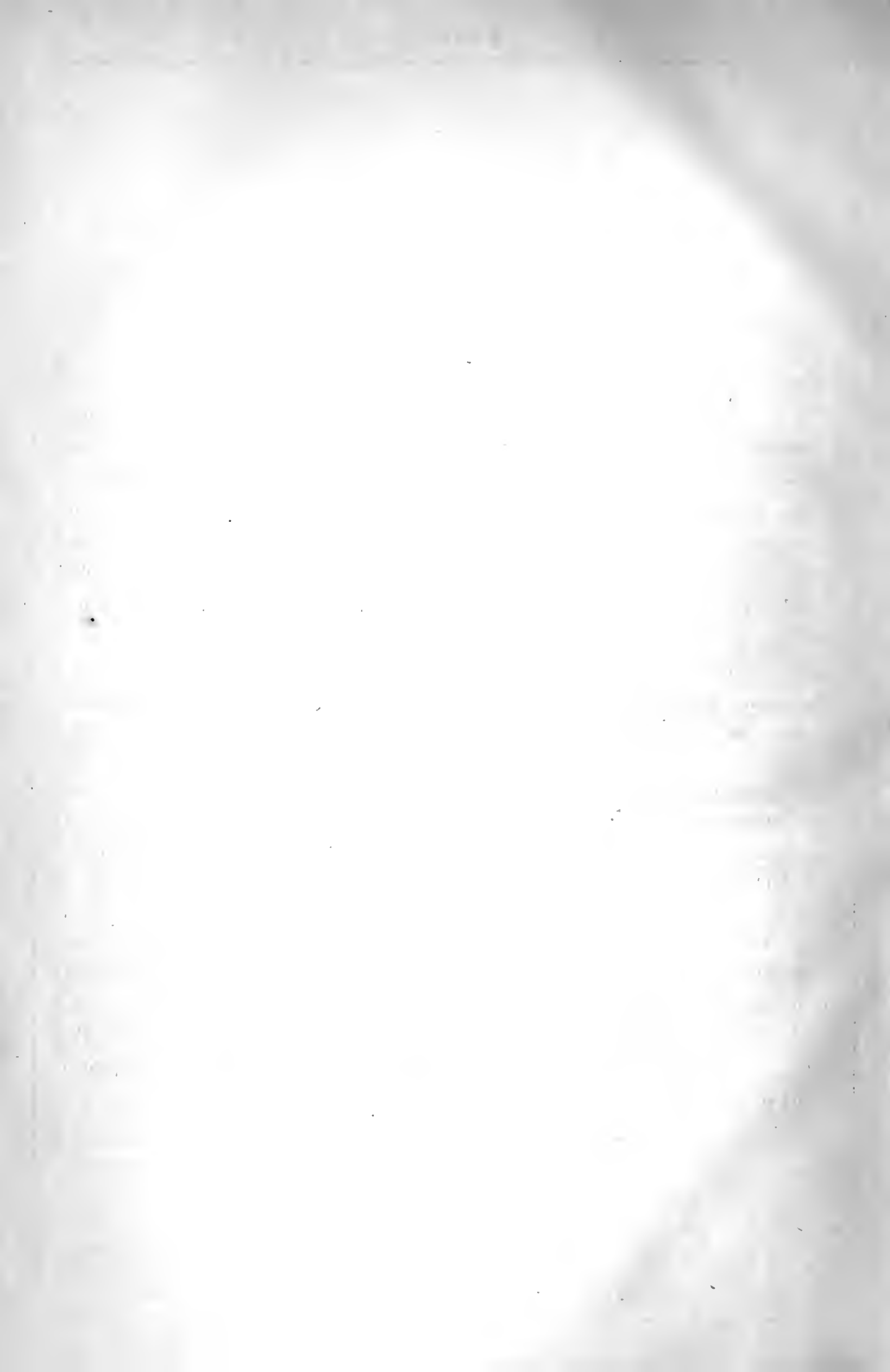
1855.

TO OUR READERS.

BEFORE another six months are passed, and we take up our pen once more to thank you, we hope that the swords now glittering over Europe will be resting in their scabbards, and many of the hands now upon their hilts be grasping the handle of the pruning-hook. Long before that time recurs, may many an eye now intent upon the hostile Eagle be dwelling in gentler mood over our pages; and may many a tongue now cheering on to the fray of death be then saying with Warren Hastings, "In this house I live, because it is the house of my infancy; and I love it as no alien could. Its grounds were in my mind all the time I was in the East, and on them I had fastened my affection." We write this with the more earnestness, because, if we pause from our writing, we can look out upon a gardener well stricken in years, whose grey head is more bowed down since the day which brought the intelligence that his son had fallen before Sebastopol.

Midst this season of turmoil and bloodshed, the cultivation of the soil in our own island homes is one of the few arts that has advanced unchecked; and we have not relaxed in our efforts to aid in diffusing and imparting the best knowledge attainable relative to all its subjects.

We have added to our list of able Contributors; we have increased our expenditure upon Illustrations; and we have devoted more space to the "Gardening of the Many." Other improvements we have still in prospect: and when, like Janus, at the close of another period, we look back upon the past, as well as forward to the future, we anticipate and trust that we shall be able to say truthfully, "From golden hours to golden hours we pass."



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WEEKLY CALENDAR.

D M	D W	OCTOBER 3—9, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
3	TU	Scaphisoma agaricinum.	30.043—29.988	55—28	N.	—	5 a 6	33 a 5	1 42	11	10 54	276
4	W	Staphylinus olens.	29.965—29.608	58—52	S.W.	33	7	31	3 8	12	11 13	277
5	TH	Aleochara impressa.	29.407—59.263	57—38	S.	33	9	28	4 32	13	11 31	278
6	F	Mycetophagus undulatus.	29.461—29.371	53—47	S.W.	08	10	26	rises.	13	11 49	279
7	S	Death's-head Moth.	29.418—29.389	56—47	S.W.	12	12	24	6 a 7	15	12 6	280
8	SUN	17 SUNDAY AFTER TRINITY.	29.475—29.469	60—41	N.W.	46	14	22	6 24	16	12 23	281
9	M	Feathered Footman Moth.	29.743—29.586	62—35	S.W.	—	15	20	6 44	17	12 39	282

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 61.7°, and 42.9°, respectively. The greatest heat, 80°, occurred on the 5th, in 1834; and the lowest cold, 29°, on the 5th, in 1850. During the period 93 days were fine, and on 96 rain fell.

ONE of the most important objects which can engage the gardener's attention at this season is the perfect maturing of the bearing wood of his trees and shrubs. This maturing, or ripening, is equally essential to success, whether the produce of the tree or shrub be either fruit or flowers.

By the maturity or ripeness of wood, the gardener means a cessation in its growth, and a completion of the storing up in its cells of the materials out of which the next year's fruit or flowers are to be formed.

Many of our readers consider, probably, that the plant generates the materials from which its flowers and fruit are formed only just as those materials are required. But it is not so. Every plant, of which the life is not limited to one year, forms fruitful buds now, and digests and elaborates, and stores up sap for the next-year's development of those buds. The completion of this storing up, as we have already observed, constitutes what is termed "ripening of the wood," and its importance is so patent that it needs no argument to win an acknowledgment of its desirability, even if such ripening had influence over no other circumstance of the plant's life.

This, however, is not the case, for on the well-ripening of a plant's wood largely depends that plant's power to defy the frosts of winter. This may be explained upon chemical principles, for the well-ripened wood of plants contains more of solid matters and less of water than is contained by wood unripened. Consequently, it is less liable to be frozen and have its sap vessels burst by the expanding ice. There is, however, another reason; namely, that so soon as a plant has completed and perfected its growth, it becomes dormant, and like the Bear and the Dormouse, whilst thus torpid it can endure unharmed a degree of cold that would be fatal to it whilst its functions were active.

It is this disparity of power in ripened and unripened wood to resist frost which causes, in most instances, the discordant statements as to the hardiness or tenderness of plants of the same species, and it was never more impressed upon our attention than during a recent visit to the garden of Dr. Garnier, the Dean of Winchester, at Bishopstoke, near that city.

This garden slopes gently to the south and is well sheltered from all winds blowing from any points of either the north or east. All this promotes the ripening of the wood, but it is still more effectually promoted by the thorough drainage of the soil, and by all the

specimens, of which we shall specify a few, being grown singly. *Escallonia floribunda*, in noble bushes, grows there all the year unprotected, and it was blooming when we were there in the third week of September. *Pinus insignis*, one of the quickest growing, and most permanently of a beautiful deep green of all the genus, was quite unaffected by the last winter and spring frosts. *Ilex latifolia*, until last winter, had the protection of a mat during that season, yet it was quite unharmed. *Escallonia macrantha* had a single mat over it, but its young shoots were killed. The tips of the spray of *Taxodium sempervirens* were turned brown. A fine specimen of *Pinus Hartwegii*, twelve feet high, was matted in the winter, yet bore uninjured, without that protection, the severe frosts of April and May. *Pinus pin-drow* endured, unhurt, a frost, when the thermometer fell to 23°, before it was matted, and the still severer frosts of April and May after the matting had been removed. *Magnolias* grown as standards are good sized trees, bloom freely, and are uninjured by the winter.

Before passing from our notice of this garden, which should be visited by every one who can stop at the Bishopstoke Station, on the South Western Railway, we must notice one or two other specimens on account of their beauty, and first of the *Cedrus deodara*. It is not more than fifteen feet high, owing to the loss of its leading shoot, but that loss has given to it a massive habit of foliage, strikingly rich and beautiful beyond that of any other we ever saw. Next, we must notice the *Biota*, or *Cupressus pendula*, for so large a specimen is very rare. Lastly, there is a *Yucca gloriosa*, strikingly resembling an Eastern Palm tree, for its elephant-skinned stem is full seven feet high from the ground to its crown of leaves, and nine inches in diameter.

Returning to our theme—the importance of ripening young wood—we must observe, that Mr. Dummer, the Dean of Winchester's gardener, is quite alive to the subject, and to the promotion of that object by frequent removals, root-pruning, and other modes of checking late autumnal growth. Upon these, and other relative topics, we have just received the following from Mr. Errington.

"People are continually complaining of the barrenness of their trees, or their shy setting, and yet do not take the means at hand to remedy it—do not even recognise fully those principles on which a crop of healthy blossom depends. To be sure, after all our pains, it is not possible, we know, to command a crop; the blossom

in its own nature, even when perfect, is but a delicate thing, is not qualified to stand some of those fierce vicissitudes of weather which but too often occur in the months of March or April, and which not even the appliances of canvass and other such protective materials can thoroughly withstand. For my own part, I have generally had such crops of Pears as have surprised most who have seen them; yet, albeit much pains was taken in protecting with Fir boughs, the crop is this season all but a failure. But I do hope that this mishap, however it might occur, will not be considered by our readers as disqualifying me from offering advice, or that it will have the effect of weakening my own faith in those principles which I have long since proved to be of eminent service in contributing to the thorough ripening of the wood, and the organisation of a perfect blossom-bud. Those who have adhered to the maxims of summer-stopping, &c., so often inculcated in these pages, will have little to do at this period; their wood will be in a very different condition to that of trees which have been allowed to run riot; and a little careful comparison between the two will soon prove this, at least, to a man of sound practice. Peaches and Nectarines, nevertheless, will frequently produce a considerable amount of secondary spray immediately a heavy crop of fruit is gathered, and such may continue growing until the middle of October. This character of wood I protest against, as of more harm than good to the tree, unless in some particular cases. It is perfectly obvious that such growth can contribute nothing, at that late period, towards the solidification of the wood, or, in practical words, the ripening of it; it is a dispenser, rather than a collector, and the only results that can accrue from it will be to sustain a later root action, leading to increased grossness, and a consequent tendency to immaturity in the ensuing year. All such growing points had better be pinched away at once, so closely as to permit the sun to shine on the principal foliage. If, however, trees be very weak, they may be suffered to grow until the very end of the month.

"The red-spider is apt to commence sad havoc about the period of fruit-gathering, or directly on the heels of it. If such be the case, sulphur had better be liberally applied, dusting it thickly on the back of the foliage. At this period they do more harm than at any other, devouring the very sap, which is the principal agent in ripening the wood and perfecting the buds.

"Pears equally demand attention, especially if neglected previously. Indeed, although well attended before, they will often produce much late spray, especially if the crop be thin. All such should be closely removed, not leaving a vestige, if possible, both breast-wood and every leading shoot; for extension is here no good, but a positive harm to the ripening of the buds. Plums may require a little of this sort of work, too; but it may be observed, that this close pinching for the purpose of promoting a healthy blossom-bud in the ensuing spring, has reference, in a more particular way, to our more tender fruits. At any rate, I advise, in all cases, that the leading shoots of strong character be at once

pinched—of every kind of fruit—if *time permit*; and, indeed, this very clause might have preceded these recommendations with a good grace. Not every one, I am aware, can carry out these things; the labour question is a most ticklish one, and, where more has to be done than can be accomplished, it is often a most painful necessity, on the part of the gardener, to determine on neglecting something of secondary importance. But, indeed, in high gardening, there is scarcely anything, in these days, recognised as of secondary importance; for, if a given party or parties relinquish the culture of something for a while, as an unimportant affair, it so happens that, be what it may, other parties are pushing its culture with the utmost vehemence; and the Press, which never slumbers, speedily reporting progress through the length and breadth of our land, rouses the apathetic, and gives new life to questions in a state of decline.

"And now comes the period for *root-pruning*, which I name here as an adjunct to those provisions which promote fruitfulness. It has been the fashion with some, of late, to deery root-pruning; but, why? When their opinions—not arguments—are looked into, they possess, as far as I have seen, no breadth, no principles. It is marvellously strange, that whilst some persons are recommending systematic root-pruning every two years or so—and their opinions are tolerated—that others, as myself, should be stared or pointed at, for having the temerity to suggest *occasional* root-pruning, whenever a healthy and plethoric tree calls out, 'Come, BLEED ME, my vessels are too full.'

"There is, it would appear, nothing like the Yankee plan of 'going the whole hog'; people then feel assured that the promoter of some extraordinary practice is either mad or can point to progress; in the former case, the asylum can speedily relieve them; in the latter, they may be enabled to steal a march a-head of their fellows. Besides this, there is a kind of character which likes—as the Athenians—to 'tell or hear some strange thing.' Our moderns, I believe, call this a pruriency, which means, I suppose, not an itching palm, but itching ears. However, as I may be blamed for joking, I will now venture on this root-pruning matter, as shortly to become a seasonable affair; whether fashionable, or not, depends on influences individual and combined, which no man may calculate.

"I still aver, then, that root-pruning, in judicious hands, is a necessary branch of garden economics. We believe that no man in his senses would plant a tree in a soil so gross, or depth, with power to range so unlimited, as intentionally to invoke the root-pruner's aid. But who is he that can so apportion the soil of trees in a kitchen-garden as to provide against that superfluous strength which, in showery and growing periods, is an overmatch for the amount of sun-light; or that leanness, fruit cracking, or twigless appearance, which is the result of dry and hot periods acting on unfertile soils? I say, no man. It is all very well to select skilfully, to plant on well-recognised principles, and to give first-rate attention to the trees in their after deve-

lopment and progress; but, after all, we must expect occasional failures; so many are the contingencies that may conduce to failure.

"As to the period of root-pruning, there is every reason to consider that period which is most proper to remove deciduous trees or shrubs as the best for the root-pruner. One of the worst effects that I have witnessed in the root-pruning of trees of some size, is their liability to become infested with scale or red spider in the ensuing summer. This I have repeatedly found the case, and is doubtless owing to the enriched character of the sap, which suits the insect better than that in trees of luxuriant character, and possessing powerful absorbing fibres. But by root-pruning, as soon as the fruit is gathered, bearing trees, and about the third week of September, those which are barren, a host of new fibres will be formed ready for spring work, and the extreme severity and suddenness of the shock will be relieved. In all cases, the soil excavated in the act of root-pruning had better be exchanged; this may at all times be done with any adjacent fresh soil, for it is nonsense to introduce composts of a stimulating character in its room, where a tree is luxuriant already. I do not consider root-pruning is a proper remedial measure for other than trees over-luxuriant. Whatever may be the merits of annual or biennial root-pruning by system, it is quite certain that it can never attain a position beyond that of a hobby; not one gardener in ten can find time for such tedious and labour-consuming proceedings.

"Besides, the pinching back all late spray and root-pruning, the preparing stations for any fruit-tree planting necessary, is another important proceeding for the end of September. This period is also a capital time to replenish the compost-yard, as also to clear all collected materials in the rubbish-yard. This should never be missed; its use is important in every division of gardening."

OCTOBER AND NOVEMBER CUTTINGS.

WHEN I was in Perth Nursery, thirty years since, we used to have all the *evergreen* cuttings finished by the end of September; they were then all planted in No. 24-pots, and in a very sandy compost; the cuttings for one pot, being all of one size in height and strength, were as close to one another as they could stand: the pots were kept in cold pits, or plunged in sand-beds, and covered with mats stretched over temporary coops, crates, or cradles; and we seldom lost one cutting out of five hundred.

There were no *Rose*-cuttings in those days, and standard *Roses* were but then being introduced; but we had a better way of increasing some *Roses* by layers than is now practised or recommended in England. There was one thing about which almost all the hands in that large establishment were very jealous—the credit of our nursery skill in rearing and sending out good examples of everything we sold; we, of course, to the last boy, being included in the firm, and we would think it an everlasting disgrace to "sew out" such plants as some people do now-a-days. Early in October, and before all the leaves dropped off the *Gooseberries* and *Currants*, we began making cuttings of them. A head man would collect the different kinds, and tie them in bundles, with a tally-stick in each; and the law was, that one

bundle only should be loosed at a time, all the cuttings of it to be made and tied again in a bundle, and the refuse swept away before the next bundle was loosed. These precautions were necessary to save the credit of the firm for sending out things true to name. Now, as I have never since heard of a better plan, it is just the one I would recommend, at this season, to those who are about to start with *Rose*-cuttings on a large scale.

I take it for granted, that more *Rose*-cuttings will be made during the next six or seven weeks than has been made, in an equal space of time, since the flood; therefore, some system ought to be adopted throughout, else we shall have fusions and confusions of kinds, which no man can set to rights under a twelvemonth at least. Just think of the vexation, after having ever so many *Roses* on their own roots, and by your own hands, that you cannot make sure of planting any one bed with two or three kinds of them to suit; and all this from not going to work the right way at first. Look at the wonderful simplicity of language, and the enormous multiplicity of details in the plan adopted by our generals for landing the army in the Crimea; then look at the result, and say if language was given to man to hide his thoughts, or if there is anything on earth too great for the simplest language to encompass and explain;—yet, without a *system*, all goes without its value, even to the sweeping of the hearth. Therefore, if you do not happen to know of a better system than mine, about the *Gooseberry* and *Currant* cuttings, adopt it at once for *Rose*-cuttings. Where *Roses* are cared for at all, they are named in some way or other. They will not be all ready in one day, or week, or even a month—the dry harvest-time stopped some for the season, and the rain afterwards pushed others into new growth beyond their time; still, one kind is likely to be in the same condition all over a garden, and every cutting of that kind should be gathered in one day, numbered with a tally, and tied into a bundle. There is no fear of harm if that bundle, and all the bundles, lie on the grass, or anywhere, for hours, at this season of the year; so that, if it is a fine day, one had better get as many kinds of cuttings together as are in a fit state, and if to-morrow or the next day happens to rain, the cuttings are at hand and ready to keep you employed in-doors; then, of course, you will do as we did at Perth—sweep aside the refuse from one bundle before you open the next; else, if a piece, or shoot, from your very favourite *Rose* falls among the refuse, you might as well look for a needle in a hay-rick, as to make sure that you have had the right shoot back again until you see it struck and in flower next August.

If you are in a hurry, or have to leave for a week or ten days, let that not hinder you from taking the cuttings the moment you and they are ready. You can put them in by the heels in damp earth, and in a shady place, till you have more time, and it does not matter "a bit" if they lie in by the heels for ten days or a fortnight, but it matters a great deal if they get too ripe, by being left till a more convenient season.

It is just the same after *Rose*-cuttings are made, they need not, of necessity, be planted that day, or that day fortnight, if it must be so from bad weather, or any other cause; put them in very safely this time by the heels till you are ready, or in the humour of the thing.

Now, the day for making the cuttings is come at last; take, then, the first bundle, and I shall show how the cuttings stand; some have heels to them, and some have no heels, according as they were, or could be cut; put all the heeled ones into one heap, and leave them to the last; the rest of the cuttings you will find to be in two ways, and you will have to prepare them in two different ways, so that in every bundle of *Rose*-cuttings, three kinds of cuttings are generally found, and there must be three ways of making them—the heeled, the

jointed, and the single-eyed; the last two are before us, and the *jointed* ones are the next safest to the heeled. So we take them first; a jointed-cutting is never from a *side-shoot*, and it is seldom from a *leading-shoot*, which makes it a puzzle to many; it is *always* from the top of a small shoot that has made a *second growth*. Now be sure to mind my italics, I put the greatest stress on them; the second, and, occasionally, the third growth of the season from a weak shoot makes the very best of cuttings, often better than the best heel; the shoot is cut just below where the last growth began to grow from; at that point you will see lots of minute buds clustered together all round a space of less than a quarter-of-an-inch, while it is quite smooth below and above it, between the eyes; this we call a joint, or jointed-cutting, because so many joints seem to grow then together; this part is cut square across just under the joints, or with a slope cut, if you prefer it, to try the experiment of the pot; all the leaves may be cut off at this late season, and the top part of the cutting if it is above four inches long.

This being the first time that the distinction between a joint cutting and a single eye-cutting is made so plain by writing, I wish it to be thoroughly understood; we gardeners never fail to take advantage of it in all cases where it occurs; but I should have never thought of explaining a thing so simple in itself, and so evident, were it not that I discovered, the other night, that it was a mystery to some practical amateurs to whom I was showing the different ways in the dining room. The single eye-cutting is the most common in all plants, and is the one where you cut across under a full eye, and where there is a space between one eye, or pair of eyes, and the next eye. When a shoot is too hard, or too ripe, which is the same thing, and we pull it out of the socket to get a heel with it, we often cut away the heel, because the part next to it is softer, and it is generally in the same state as a jointed-cutting, lots of little eyes clustering close together, immediately behind the heel. If you stand five minutes against a laurel hedge that is well trimmed, you will learn what I mean by a jointed-cutting better than any other way; mark the young growths and follow down with your eye, from bud to bud, till you come to where that little shoot started *from the top* of the last growth, and there you will find the little cluster of buds at every one of them, if you understand me right.

After you are master of this, to you, most essential discovery, see how easy it will be to select cuttings from your own Roses; then, if the Rose is very young, or very scarce, it seems a pity to pull out side-shoots for heels, as no shoot will ever come from the same parts; when the chances are, that if you cut low enough, and just home to the heel, you secure a jointed-cutting of the first order, and I hold it to be as good as a full heeled-cutting, in nine cases out of ten. By taking all this care, and no one can ever take too much care, in selecting your cuttings, you seldom need to take an eye-cutting at all, you will have plenty of them among the tops, which you must cut off "whether or no"—there is nothing else but eye-cuttings in the tops of all the shoots in England.

What would you think of silver candlesticks, chandeliers, mirrors, and side-tables, to a potting-bench, as we had in that dining-room? Surely, to be born with a silver spoon in the mouth is nothing to all that, and Rose cuttings were never so cared for before; if they will not grow, it is not from want of glare and excitement; but we did it all for exercise, and to illustrate a lecture on Rose-cuttings, the chief heads of which are now before you. We potted most of them, it is true, or rather double potted them on Mr. Forsyth's plan, but the pots were to be plunged out-of-doors; and when the cuttings are well rooted and beginning to meet round, the two pots may be withdrawn, and the ring-like ball be planted in one-

half rotten dung and one-half good garden mould, without disturbing a single root or leaf; and if ever you saw such Roses as we shall have this time next year, you will let us know; till then, we shall expect, as they would in Suffolk, that ours bear the palm. You would probably prefer a solid ball to the roots instead of a ring, but surely you would not choose a single pot for your cuttings in preference to the double set, to arrive at a ball at last, seeing how easy it would be to withdraw the inside pot first and fill the hole, or, if you like it better, fill the mouth with something good, and when that was sure in the jaws of the cuttings, a whole ball would turn out as if it were so from the first.

Now, were it not for any other reason, would it not be worth while to prune Roses in November, on purpose to get a thorough good supply of Rose-cuttings at once? and if it would, the strongest shoots and the middle-sized would be those to choose for the cuttings, heels to every one of them, if joint-cuttings did not cast up in sufficient numbers; or, if both were not enough, stout cuttings on the single-eye plan would do, provided they were taken from below the middle of the long shoots, the bottom parts being the ripest and least likely to damp or decay from too much moisture. All the cuttings from that harvest should have the leaves cut off, and not be more than six inches long, four of which to be buried in the ground, with an inch, at least, of sand all round the bottom of each. I would not have a single eye extracted from such cuttings, as they do when they want them for stocks, the lowest eye might turn out to be the best; besides, it often happens that when an eye thus buried starts well, roots come forth from the shoot it makes, and I have seen three or four young plants got this way, in a season, from one cutting, besides one or two shoots to be left on the original cutting to form a stronger plant; but of this increase we are never sure till we take up the whole for transplanting, and perhaps it will be as well not to crow too much at first, till we see how the thing turns out; if one got but one plant for every cutting put in, there would be no reason to complain.

I shall conclude with an experiment which has never yet been tried; but it struck me, more than once, this summer, that something might be made of cuttings in general, in the open ground, by planting double rows of them across a border, here and there, or across any piece of ground, like as they used to grow two rows of Peas together formerly; then, to facilitate the rooting, and to keep the bottom more safe, I thought that a single row of soft tiles, or something that way, might be set between each double row of cuttings, and the bottoms of the cuttings to face against the tile as against the side of a pot; soft bricks would do equally well, but would take up too much room; and I am not sure, whether slate would not be equally good for winter work, and tiles in summer; at least, the thing is feasible enough; and, provided the slate or tile was quite firm, and the cuttings as firmly made to stand against it, there could not be as much danger to the cuttings as when they are merely set in common earth.

D. BEATON.

BENEFITS OF COTTAGE GARDENING.

NORTHAMPTON SHOW.—SEP. 19.

SOMETHING like a hint has come in my way, that a more close attention should be paid to the *headings* of our articles. There may be people who can run, read, and digest only as they see a straight path before them. They have no objection to cut through a mountain,—or, rather, they will use that way when clear heads and brawny arms have made it for them; but they dislike to be taken round its base, even though the termination should be a valley of enchantments. Much will be done

to please this straight, go-a-head fraternity; for, even with the fate of the old man and his ass before us, I believe that much may be done towards pleasing every body, if we thoroughly and zealously try. This is, no doubt, a hard statement for those who have much to do with the egotistical impracticables of society in general, and the out-jutting, sharp, angular points of humanity, that too frequently manifest themselves at provincial horticultural and floral gatherings in particular. Some committees of management that I have met with, by great study and exertion, have actually got into the knack of pleasing every body but themselves; and what has been done once may be done again, not in one, but in every department of life. If we "never give up"—toss sulks, dumps, and lions in the path, to the winds, what is there that determination and perseverance cannot accomplish?

Now, with every desire to please, and with a resolution to keep my eye on the main walk of a subject, I must stipulate for the liberty of now and then having a peep into all the bye-paths connected with it; and first to know, and then let others know, the "whys" and the "wherefores" of their uses and destinations. This may lead to a seeming divergence, at times, from the stereotyped route, from which no consideration would tempt our very quiet, orderly people—partly, because they will not be troubled, ("canna be fashed"), to make the necessary exertion; and partly, because they are more *manacled* by a coteried punctilio than the silly monkey was, who had not sense enough to open his fist, and thus extract it from the narrow mouth of the singar-jar that kept him a captive.

The fact is, that with every due regard to that knowledge and means of improvement that streams upon us with the brilliance of noonday splendour, I have very great faith in the influence of that more mellowed light that arrests one's attention by its appearing, unexpectedly, *incidentally*. I have listened to brilliant and eloquent denunciations against vice, errors, and prejudices; but where were the myriads of the converted and reformed? I have heard plain, forcible, because heartfelt, exhibitions of the good and the true; and without arousing opposition, prejudices were undermined; and thus errors and vices were toppled over as thoroughly, but much less noiselessly, than if battered down by force of argument and logic. The true social reformer will often find that a parade of gaudy machinery impedes him in his work. All talk and little do; all cry and little wool, are too often their attendants. Until human nature is changed, men will be acted upon *incidentally*, when their pride spurns the idea of being operated upon directly.

Among these *incidental* means of social amelioration, I claim no very secondary place for the love of gardening as fostered among the masses by provincial societies. I enter not now upon questions previously discussed, as to where, and how far, gentlemen's gardeners should take a prominent part in them. Whatever opinion gardeners and their employers may hold on these matters, and with perfect fairness and consistency, I have never heard their utility disputed, as affecting our peasantry and artisans. But even here their chief value is to be found, not in the generally seen and direct, but in the *incidental* and gradual results, which, in themselves, prove richer rewards than any prizes a society could bestow, but which might never have been reached without this or other kindred excitements to exertion. For instance, I have heard well-informed people, when viewing such superior garden productions as the cottagers' exhibited at Northampton, speak patronisingly of the benefit which such a superior and increased supply must be to the man and his family. Now, I am far from undervaluing the advantage of this, merely as it affects the first question, and yet there are less obvious, more in-

cidental advantages that seem to be rather more important; advantages that are no dream of romance, but which have frequently come under our own observation and experience; and a few of which I will merely notice.

First, there is the habit of *industry* produced. Get a man thoroughly fond of working among his vegetables and flowers, and you will look in vain for him lounging in company with his old companions, with pipe in mouth, and hands dug in pockets, as if he was ashamed to see them, while his burley back keeps up a fence-post. If you wanted a good day's work done, who would you employ? the idle lounge; or he who is seen actively and usefully engaged from "early morn to dewy eve?"

Then, there is the habit of *cleanliness*. Dirt seems a second nature of some people. Much, however, may at times be urged in extenuation, owing to the tumble-down hovels in which they live. I have often seen a nice cottage and garden completely change the outward appearance of a man and his family. The clean garden, the pretty flowers, were an ever present argument against all untidiness. I have known several cases where this silent argument was so powerful, that those rather slovenly in their persons and clothing, brushed themselves up before they visited the neatly-kept gardens of their neighbours.

Then, there is the benefit of *temperance*. Many cottage gardeners in Hertfordshire may have their *beer*; and many in Northamptonshire may get down a fair allowance of *drink*; but in proportion as the love of the garden, and especially of flowers increases, there is less likelihood of going to excess, as the very industry and cleanliness they have acquired will also teach them *self-respect*. There can be no question, but the love of the drink keeps our working-classes from hand to mouth, unable to make a single move to raise themselves in the social scale. Unless, in the case of actual teetotallers, I know of few instances where the influence of the love of the garden has led men to drink wholly from the same crystal liquid as that with which they supply their favourite plants; but I have known of many a noisy tap-room roysterer, who now enjoys, and only on high occasions, his glass and pipe with his wife and family at his own fire-side.

Hence, again, the industrious cottage gardener becomes a good *example* for his family and friends to imitate. We cannot easily escape the influences of the circumstances in which we are placed. Humanly speaking, it is next to folly to expect some young people to do well. Society, some day, may find it even cheaper to prevent, than to cure and to punish. Do everything to foster habits of industry and prudent forethought, and one great element of danger is in the way of being counteracted. An old adage tells us, that a certain personage, whose name must not be whispered to ears polite, in these wondrous civilised times, "Always finds work for idle hands to do." Let no hands, nor heads either, be idle.

Even this latter result is greatly promoted by attention to cottage gardens. They ever preach sermons in the most homely and familiar language. *Thoughtfulness* is an inseparable attendant on good gardening. All think, —the most ignorant, as well as the most intelligent. Wherever there is reason, however begrimed and beclouded, there is and must be thought, ever, continually, sweeping through the brain. But, what boots thought, without object; what is its value without concentration? Many an uneducated man has first felt the powers of his own mind—the stirrings of Divinity within him—as, in contemplating and examining a flower, he found himself in direct contact with the handiwork of all intelligence, the source and centre of all thought.

Then, again, this will lead to study, and yearnings after general intelligence; and, next to religious princi-

ples, this will prove the greatest antidote to revelling amid the grovelling and the gross. The physical is cared for; but the intellectual, and the moral, likewise, must be nourished. Books, lectures, sermons, have a charm and an interest unknown before. Many, who rail at the public-house, forget, that in many cases it is the only change, excitement, and mode of enjoyment a man can have. Society, something to think and talk about, must be had. If the pure is not obtainable, what must be the general result? As powerful incidental means of social amelioration, I would advocate cottage gardens, and village reading-rooms, as at Seal.

Then, lastly, there is the feeling of self-respect and comparative independence fostered. The good supply of valuable food is, of itself, a great advantage. There are not quite so many streams for the little-money wages to run into, and by degrees an air of greater comfort prevails. But this is not all; new feelings and aspirations are developed within. Notions about the parish and the union are exchanged for the noble desire to support himself and his by his own industry. He plants his foot more firmly on the earth as he feels he is now a free man, resolving never more, if blessed with health and strength, to receive the dole of the pauper. I believe that such a feeling of self-respect and enlightened independence will do much to efface the mischief that an indiscriminate charity has too often produced. Two facts are just now come into my mind. In a village, where most of the labourers were paid well, I witnessed a whole troop of women, married ladies, young and old, trooping off to the parsonage to get a sixpence each, as an eleemosynary gift. In the majority of these cases there was no charity in giving, and I know there was no gratitude in receiving. On another occasion, a lady commissioned a servant to give a flannel jacket to all her workmen, and all took it with thanks, without asking a question; but one hard-working man, who was well-known to have brought up his family in such a respectable way that he and his wife must have submitted to many self-sacrifices, at once inquired whether it was given in *charity* or as a *present* from her ladyship, because, added the true-hearted fellow, "in the latter case I will be proud to receive it, but in the former case I should decline, as, thank Heaven, there are many more needful than I am." He was merely a sample of what the encouragement of the love of gardening, and the attendant advantages I have glanced at, was instrumental in producing,—one of those bold, enlightened, self-respecting, and respecting-others, peasantry, that constitute, not merely the "pride" but the very heart's blood, back-bone, honor and security of a land.

I shall care little about any criticism on the *incident-alism* of these remarks, if they only tell in the proper quarter. Many splendid specimens of cultural skill, even from cottagers, were passed unrewarded at Northampton, just because there, and elsewhere, landed proprietors, and rich tradesmen, content themselves with giving a trifling subscription, and leave active, working-for-love-committees to struggle as they may. Would that some eloquent tongue would demonstrate that there is in these institutions something more noble and spirit-elevating than the mere pleasure of the passing hour. Let the physical, the intellectual, the moral improvement which the love of gardening encourages, be dwelt on by all means, but let an appeal be also made to the breeches-pocket interest. All that has ever been done to elevate the condition of the working man is but as a drop in the bucket compared with what it has cost, by forced taxation, to support the idle, and to restrain and punish the vicious. A few pounds spent directly, or indirectly, in fostering the love of gardening and its attendant consequences, might save tens and hundreds, that *must*, however reluctantly, be doled out for work-houses, police, and gaols. Will such a state of things

always continue? Will cheap, pleasant prevention never be found more advisable than costly, unpleasant remedies?

Vegetables.—For these Northampton has long been celebrated, and it outdid itself on the present occasion. They were truly magnificent, and such quantities of them,—not one inferior article present. There was a very keen contest among the cottagers, as well as among amateurs, market-gardeners, and gentlemen's gardeners. Among the cottagers, J. Harris, of Hardingstone, carried off the prizes for a collection of six vegetables, and a collection of three kinds of fruit. Besides four prizes for each of these collections, there were several prizes for single dishes of all the best vegetables, as Kidney Potatoes, Round Potatoes, Carrots, Turnips, Onions, Beans, and then three separate prizes, by private individuals, for the three best collections of six vegetables, so that the tables actually bent under the fine and elegant display. The same thing may be said of the fruit in the cottagers' class. I noticed a good share of the prizes went to workmen at Courteen Hall, and no doubt they get good lessons there. William and John Arnold figured frequently on the winning cards. The collections exhibited by market-gardeners were also splendid, Mr. Watts taking the lead with eight kinds of vegetables and twelve sorts of Potatoes, closely followed, in the former case, by Mr. Grady, and in the latter case by Mr. Archer, who has kindly promised us an outline of the merits of the various kinds of Potatoes exhibited, many of them being so fine as to defy all attempts at recognition when contrasted with the same kinds in other parts of the country. A pleasing fact still remains to be chronicled. I heard some people remark, at the cottagers' tables, "Aye, just what I always say, if you want to see fine vegetables, you must go to the *cottagers* for them." Some gentlemen are opposed to their gardeners exhibiting, because they would pay so much attention to flowers, that there would be endless short-comings at the parlour table, and in the province of the *artiste* of the kitchen. There may have been reasons for this conclusion; but not a shade of a manifestation was present on the 19th. The productions of cottagers, amateurs, and market-gardeners, were worthy of all praise; but the collections and separate dishes of Messrs. Barber, Mackie, Gulliver, Collins, Johnson, Worall, &c., were quite up to them; while the collection of eight vegetables belonging to Mr. Gardener outshone the whole, every dish being first-rate—large, well-grown, and yet young, crisp, and sweet. The collection consisted of Turnips, Carrots, Parsnips, Kidney Potatoes, French Beans, Beet Root, Onions, and Globe Artichokes. The Potatoes, as a whole, were, perhaps, the most remarkable among the vegetable productions. Among the most striking, I noticed the following among the Kidneys:—*Engineers*, *Napoleon*, *Lapstone*, *Flukes*, *Jackson's Improved*, and a Seedling from Mr. Betts, a gentleman in the town. As this latter was shown separately, or from some mistake, it was highly commended, instead of being awarded a prize. It seemed to be derived from a *Lapstone*, if it was not one, being of the same flat shape, but much larger than any other samples of that variety. A gentleman told me it was not raised by Mr. Betts, but that a potato had been sent him as a new Seedling, that he planted and saved the produce; and that not long after, the servant cooked the most of them in a mistake, but that he has now obtained a fair stock from the remainder, and speaks highly of it as a producer, and for its good qualities at table. Another person, I think Mr. Mackie, told me, that the habit of the plant when growing was very different from the *Lapstone*. There can be no question that it will be an acquisition if distinct and good flavoured. Among the Rounds, I noticed five specimens of *Fleck's Early*, *Early Manly*, *Regent's*, *York Regent's*, *Flower Ball*,

King of the Beauties, Parkinson's Seedling, and Farmer's Glory. The last was exhibited in several dishes, perfect monsters in size, almost as large as half-quartern loaves. I have seen bread made up into two-penny twist serews, when the quartern loaf was about 7d. or 8d., and two of these screws, a little flattened at the ends and placed together, their flat sides reposing on each other, would give an uninitiated person no bad idea of these *Farmer's Glories*; the chief objection to them being their prodigious size and the depth of the eyes, which would occasion considerable waste if paring was resorted to before cooking. I was informed that even at that size a considerable number was obtained from a root.

Fruit was very respectable, on the whole. Good Pines were shown by Mr. Newman, gardener to William Selby Lowndes, Esq., and first-rate Dutch Hamburgh Grapes, and very fine common Hamburghs, came from the same gardener; also very good Hamburghs from Mr. Scott, gardener to Mr. Whittlebury. But I must leave particularising other articles to the county papers. Plums, Cherries, Apples, and Pears, were in good condition; Peaches, Melons, &c., very fair.

Flowers.—There were some excellent stove and greenhouse plants exhibited by Mr. Jeyes, in the nurseryman's class; and a collection of twelve Fuchsias came from Mr. Perkins. Among these *Olio*, a neat, compact thing, with reflexed blush sepals, and deep pink corolla; *Queen of Hanover*, whitish reflexed sepals, pinkish petals, stiff and firm in habit, the foliage rather large; *Trentham*, a very desirable variety; sepals half reflexed, sprigging themselves out with a very coquetish air; nearly allied in habit to the *John Falstaff* and *Globosa Perfecta*. The others were chiefly well-known good kinds. *Duke of Wellington* was shown separately. It is a neat, desirable reflexed kind, but not equal, in our opinion, to *Trentham*. We noticed it at the July show, but it has not quite gained a flaming character. The same gentlemen showed Roses and Hollyhocks, in which they were alternately first and second. The Hollyhocks were shown in single blooms, a system far inferior to exhibiting them in spikes. Mr. Jeyes had blooms of the best sorts out. I regretted to perceive that neither gentleman sent any large or small evergreens in pots.

The chief attraction were the Dahlias, and considering the season, they were well grown. Mr. James Holliday was first for 24th, first for 24 open to all England, and a fair share of firsts for the single specimens, in separate classes, as also first in Fancies, closely followed in all these by Mr. Archer, another keen grower, and, I believe, dealer, and well beat up to by Mr. Mackie, gardener at Delapre. Room prevents my recording the winning flowers, but chiefly established favourites, or, what might be more interesting, if space had been permitted, a half-earnest, half-bantering discussion between Messrs. Jeyes and Holliday, at the dinner-table, about showing plants and flowers in a *natural*, opposed to an *artificial* state, and a more quiet, though not less earnest colloquy between Messrs. Mackie and Holliday, as to pruning, feeding, watering, cleaning, and shading the Dahlia. Matters upon which I am sure either of these gentlemen could give enthusiastic amateurs much information.

Mr. Mackie walked the course with Lilies, and in return, Mr. Gardener was first with stove and greenhouse plants, and first with Fuchsias. His plants were young, neat, and compact, trained to a single stem, and from three to four feet in height, and well arranged, a light and dark going in pairs. They were—*Nonsuch, England's Glory, Pearl of England, Sir John Falstaff, Glory, Diadem, One in the King, and Kossuth*. Mr. Mackie's were equally well arranged, but the plants were older.

Baskets of cut-flowers were shown in good perfection.

The first prize was obtained by one where the greatest attempt had been made in contrasting the colours in lines. Several very neat devices in cut-flowers were exhibited. Among others, a flower-garden, by Mr. Barber, the walks being formed of Marigolds. It was well balanced and arranged as respects colouring, only there was no yellow in it, the Marigolds being brown. This had a first prize. And another device had an equal first prize, which looked very nicely, though the flowers were very simple. The device was a clock-face. The large central part of the dial was made up of double Camomile-flowers; round this there was a row of Mountain Ash berries; then, from two to three inches wide of the *Ageratum Mexicanum*; then, another row of Mountain Ash berries; then, a row of Camomile-flowers; finished by a row of dark, double Groundsel. The hands were nicely moulded, and artistic, consisting, I think, of a yellowish *Solidago*, or Aaron's rod (all of which are so strong in the autumn), edged with a feathering of the *Ageratum*. The date, 1854, in the centre part of the dial, was done in the same way; and the figures for the hours were of the *Solidago*, on the blue-lilac ground between the two rows of berries.

Altogether, the show was a most interesting one, and the only complaints I heard were, that the visitors, though numerous, were not nearly so plentiful as they ought to have been. This being a subject that affects many other places besides Northampton, I may allude to the subject again. In the meantime, the first part of this letter may supply one point;—the having the shows out-of-doors, such as in a gentleman's park or garden, might supply another; as people tire of going to see flowers in rooms, and our own experience leads us to believe that no, or very little, injury would be occasioned thereby to any demesne, on a favourable day. In a town, too, where there are so many other things to attract the attention, public gardens, at no great distance, soirées, concerts, lectures, exhibitions, &c., might it not be desirable to lessen the number of flower shows from three, or rather five, into two; and upon another principle, that union is strength, to get the whole craft and fancy of the neighbourhood united in one strong effective society. These would all answer, so far as professional objects are concerned, if heartily adopted, but to carry out, to its possible efficiency, the cottage-gardening part of the question, and to give an impetus to the whole affair, the titled and wealthy must come forward more liberally than they have yet done in most places; and, in doing so, I shall be much deceived, if the money so spent will not prove the truest economy. No society can attempt much and feel safe, in a financial point of view, if, in making the yearly arrangements, they have not, from subscriptions and other sources, funds in hand to meet contingencies, without calculating at all upon visitor's entrance money. That should go with the subscriptions for a following year.

R. FISH.

ECCLESTON HALL,

THE SEAT OF W. PILKINGTON, ESQ.—

I VISITED this place, last July, to see another example of Mr. Ewing's Glass-walls. I expected to find this superior either to the one at Badorgan, or that in the Horticultural Gardens at Chiswick, and for this reason, that the owner is the principal in the large Glass-works at St. Helens, in Lancashire; the place where my friend, Mr. Errington, had the *cloches* from, that he writes about in a former number of *THE COTTAGE GARDENER*. (Very likely, many of our readers wonder what *cloches*, a French name, are; in truth, they are neither more nor less than large bell-glasses with a knob on the top.)

Eccleston Hall is about two miles from St. Helens,

and is situated on a gentle eminence, with pleasant views of the surrounding country. Though so elevated, I was agreeably surprised to find several sheets of water on the estate. The climate of that part of Lancashire is rather severe, hence, the gardener has to contend with cold winds, and long, severe winters. I found the Deodar and the Araucaria had suffered from the preceding severe winter.

The garden is tolerably sheltered by some trees on the north side; it is not very extensive, but is rendered very interesting by the great number of glass-houses for the various purposes of preserving plants, growing Pine-apples, Grapes, Peaches, and Nectarines, besides forcing Strawberries, Cucumbers, Melons, and vegetables. On the south wall there is a range of glass which covers the entire length. It is what I have described in a former number,—a glass-covered wall; that is, the space covered is narrow, and the front elevation of glass quite upright. The roof is glazed with the thick, fluted, rolled glass, which answers well. This long range is divided into five parts:—1st, for Peaches; 2nd, Vines; 3rd, a Greenhouse, which projects considerably into the garden; 4th, Vines; 5th, Peaches. A range of hot-water pipes from one boiler heats the whole admirably. The Vines are planted inside both on the wall and the glass front, trained to the upright pillars, so that when in foliage and fruit they will look like an avenue of Vines.

The Peaches and Nectarines are planted similarly, though it is intended to train the front trees upright and narrow, so that they will not shade entirely those on the wall.

The Greenhouse is an ornamental one, furnished with a stage and walk round it. From this brief description our readers will perceive that this is, of its kind, a very handsome structure. At each end of this range of glass a lofty wall runs at right angles, about 150 feet, and there the glass-wall is situated, and fills up the space from wall to wall, inclosing, as it were, a broad parallelogram of ground; this space is, with very good taste, laid out as a flower-garden, with beds edged with box, and white gravel beds between. A broad walk runs through the centre, and is crossed with another at right angles, leading from the greenhouse alluded to above, to the centre of the glass-wall, through which there is a door leading the visitor to the other bothouses.

The glass-wall, consequently, serves as a division inside the garden, which is its proper situation. This is a more ornamental erection than any of its kind I have seen. The trees inside were young, but certainly healthy, and growing vigorously. The gardener, Mr. Johnson (an old and confidential servant, and, from what I saw, a good gardener, and certainly an intelligent man), agrees with me, that in order to render a glass-wall useful to a certainty it ought to be wider, and in divisions, and heated with hot-water, with a walk in the centre, and the trees on trellises on each side of the walk. Whoever chooses, in future, to put up an elegant division of his garden should have it glass, with these improvements on the original. It is no discredit to Mr. Ewing that such slight defects should attend his first conception. There never was an invention yet put into practice but it is capable of improvement. I should be glad to see one erected on the plan I have suggested. Many gardeners that I have conversed with on the subject, say—Why not put up a sloping Peach-house at once, as a division? The only objection is, because the space would be too extensive, and the idea of a wall entirely done away with. The expense, too, is objected to; but this is, I think, a mistaken idea. A good brick-wall will cost quite as much as one side of a glass-wall. I am quite ready to admit, that as a fence on the outside of a garden, a glass-wall is of no use. Its place is as a division in an extensive garden. Most of the large gardens attached to the seats of the nobility and gentry in this country have

division-walls; and for this purpose, why not use glass, inside which may be grown a double row of the most delicious fruits, between which a most pleasant promenade in all weathers may be enjoyed.

In front of this glass-wall is placed a range of houses devoted to forcing; there are seven of them, and they are all heated with hot-water from one boiler. They are all span-roofed, and glazed with very broad, large squares of glass. I noticed some good Pines and Grapes, but the point Mr. Johnson excels in is the forcing of Cucumbers and Melons. I saw Cucumbers hanging from the roof in great profusion, on plants that had been bearing since the Christmas preceding my visit in July; they having been productive for more than half-a-year. Melons were equally productive, only not so early in the year. The arrangement of these excellent houses is, that the beds for the roots of the plants are next to the walls, and four feet wide, with a walk in the centre seven feet wide. The hot-water pipes are on each side of this walk, and are of cast-iron, with tanks to hold water cast upon them; these, when filled and the pipes hot, give out a fine, moist vapour, just the sort of heat wanted for such fruits. The house is fifteen feet wide and thirty feet long; yielding an extraordinary quantity of fruit. All these fruit-producing houses are low, the plants, consequently, are short, stout, and the fruit of the finest colour.

There are two Greenhouses and a small Stove-house in the same ground, filled with the usual plants; these, also, are span-roofed, and glazed with large-sized glass; rendering the flowers of the highest and brightest colours, proving that the more light is given the higher the colours of the flowers will be. The greatest economy is used with regard to the heat. Pits to produce early Strawberries are heated with the flue, and a space covered with boards is used to force Asparagus, Sea-kale, and Rhubarb, even when it crosses the wall and border, to be carried up the adjoining wall. The border had a long frame upon it, which is used to produce early Radishes in spring, and to strike cuttings in during the summer and autumn.

In the Kitchen-garden, I noticed that the Asparagus is cultivated in single rows, in opposition to the common method of growing it in beds. This is an excellent way, and worthy of being adopted in every garden. The Asparagus produced, I was assured, was very large and of the finest flavour.

On the lawn in the front of the house, leading to the garden, I observed a number of flower-beds; these are, I think, out of place, especially now that there is such a beautiful flower-garden of ample space in the square formed by the Glass-houses. I would do away with them, and have the lawn all grass, with groups of evergreens upon it, or, perhaps, form beds of American plants.

Mr. Pilkington is not only liberal in his garden, but also his farm-yard is managed in the best modern manner. He has a small steam-engine, which steams food for his cattle, turns chaff-cutting machines, and every other useful modern invention in vogue. I saw, also, what would have pleased our Editor, a fine collection of fowls, especially some noble Cochin-China and black Spanish birds.

Altogether, I was much gratified by my visit to Eccleston Hall, and am quite sure no lover of gardens going there but would be pleased also. T. APPLEBY.

NEGLECTED OLD OAK WOODS.

In the course of my journeyings, I often see Oak Woods dreadfully mismanaged, or, rather, not managed at all so as to produce fine, clear timber, fit for the carpenter and the ship-builder. This is a matter of the greatest consequence to our country, because, by such

neglect, the supply of good timber is becoming less every year. Land is now so valuable for farming purposes, that I fear very few acres are, or will be, planted with Oak to supply the next generation with this valuable timber, therefore, it behoves every proprietor to take the greater care of the existing plantations. Now, if a young nobleman, or gentleman, comes into possession of his paternal acres, and finds the woods in a neglected and deteriorating condition, he naturally inquires, what he should have done to them, in order to put them into such a condition as would repair the neglect they have suffered, and render them profitable both to himself and the succeeding generation. The expense of such improvements will, of course, depend upon the state the woods are in; generally, there will be always such a quantity of indifferent timber and underwood to be cleared off as will amply repay the cost, so that the expense will be covered by making the very improvement itself. If the woods are extensive, and the labourers scarce in the locality, a determined part of the plantation only may be subjected to improving operation the first year, and the same extent operated upon the succeeding season, and so on, year by year, till the whole is completed; by that time the first breadth will require further attention, in order to keep it in progressing order. This work requires a superintendent of great experience and sound judgment, and when such a man is engaged, full confidence must be placed in him and his operations. To bring such a neglected wood into good trim requires the greatest circumspection. It will not do to merely chop down and cut and slash the wood, leaving only the best trees standing, here and there, exposed to the cutting winds which they have never felt before, on account of being sheltered by their less handsome brethren. In fact, I have often seen a great amount of mischief done by such summary proceedings. Well, then, how are we to proceed? In the succeeding remarks, I will endeavour to satisfy this reasonable inquiry. First, take a survey of the wood, and mark a sufficient number of the best trees to stand, for making, hereafter, the standing timber; then go over it again, and mark others to stand as shelter for those first marked. Supposing the plantation is a very old one, then such as are evidently at their full growth, should, at the proper season, have their bark stripped off for the tanner, and the following autumn let them be felled down and sold, leaving only such trees as have vigorous growth, and promising appearance, to warrant the expectation that they will, when the superfluous trees, whether young or old, are cut down, advance in size and strength.

Excepting the sheltering trees, alluded to above, every one else should be removed, and also all the underwood. Then, if the soil is wet, let it be properly drained. These drains should be open ones, because covered drains soon get choked up with the roots of the trees. The soil thrown out of the drains may be spread on the surface, and will materially assist the trees that are left to make fresh vigorous growth. Should there be large breadths of stunted trees, some of them should be left to produce what is called knee-timber, which, to a certain extent, is as valuable as straight, clear timber, for certain purposes in naval architecture.

This thinning, felling, and draining, being completed, then the fences should be put into good repair, and the wood left for three or four years to go on and prosper. After that time the nurse trees may be partially removed; perhaps just half of them would be a judicious proportion. The trees intended to stand will have become partially injured to the breezes that rush through the thinned trees, and will be prepared for the final removal of the remainder. This gradual thinning is too often neglected or despised by ignorant woodmen, who cannot conceive that the hardy Oak can possibly be injured by being ex-

posed, at once, to the cutting winds that blow upon them when suddenly exposed by severe and wanton removal of their sheltering neighbours. This is all for the want of thinking; for even their own feelings might inform them that it is ten times colder in a newly-thinned forest than in a thick, neglected one. I cannot press this point too strongly upon every forester. I have frequently observed the ill effects of such wholesale injudicious thinning. I have seen woods with trees of some forty years standing severely thinned, and the trees that were left, thirty or forty feet high, having the appearance of slender poles, with a few branches near the top, so starved by the sudden change as to remain for seven years before they acquired any strength, looking meagre, starved wretches all the time, even if they survived the sudden change. By all means, then, thin a neglected wood gradually. In the sixth year, the remainder of the trees left as shelterers may be all safely removed.

Pruning the trees must, also, be carefully performed. Should any of them have one or two very strong, living branches, they should be shortened-in to within two or three feet of the main stem. Great care must be taken that the branches are not split in cutting them off. The saw should be used first on the under side, and the branch supported till the saw meets the under cut. These stumps will soon push forth young shoots, and thus draw up nourishing sap to strengthen the main stem. If such strong branches are cut off at once, the large wound the saw makes takes years to heal, and then there is enclosed under the new bark a large knot of dead wood, which always makes the timber less valuable and liable to decay.

The small branches on young, vigorous trees, on the contrary, should be cut off close, because the wound is small and quickly healed, and covered with bark in such a little time, that when the tree is felled no mark is discernable where the small branch has been cut off. All dead branches, on the contrary, should be cut off close to the stem, and the spot plastered over with a cement, formed of sand, lime, and cow-dung, to prevent wet from lodging, and penetrating into the heart of the tree. Dead branches are unsightly, and even if they drop off in time close to the stem, and the bark encloses and covers them, the timber will be injured by having a hole through it as far as the dead-enclosed branch reaches.

When these improvements are once effected the after-management is easy. If it is thought desirable to have a crop of underwood, the stumps left in the ground will soon spring up, and in seven or eight years be fit to cut again for such purposes as underwood is used for, namely—stakes, hoops, and fire-wood. In cutting this underwood, should there be any straight, clean shoots of Oak on the stools, one or two may be left to grow into trees. When the main crop is fit for the market, such young trees should be chosen to stand as are close to the ground, in order that they may have roots of their own to support them hereafter. I am, however, no advocate for underwood at all, and, therefore, should recommend the stubbing it all up, and levelling the ground, making it fit for the reception of grass seeds. The wood will then assume the character of a beautiful grove. This should especially be done when the wood is near to the mansion; and the pleasure of the proprietor would be greatly enhanced, if, whilst the improvements are going on, drives were formed throughout the whole extent. The progress of the trees might then be more easily seen and enjoyed. These drives should be made firm by severely beating the soil and frequently rolling with a heavy horse-roller. This firm road will be found useful when the timber is felled, or underwood cut, to drag it out of the wood on. Frequently, great mischief is done to the young trees when there is no regularly-formed path to travel on.

T. APPLEBY.

(To be continued.)

STRAY NOTES ON THE PAST SEASON.

So much having been said about the severity of last winter, it would seem superfluous to add much more to the list of misfortunes which it is reported to have entailed upon us, but as we may not have all suffered alike, a friendly interchange of notes may not be altogether useless, especially as the influence which the winter exercised on different things varied much in the respective localities that have been reported on. The most severe winter frosts, seemingly, were in the central district, or rather a little to the north of it; Nottingham and its neighbourhood having witnessed the thermometer at zero, while here (Staplehurst) we never had more than 19° of frost, and that only on one night. This, of course, makes all the difference, yet it is not always that a severe night's frost is the sole cause of all the injury done to tender plants; for a period of changeable weather, alternating between frost, snow, rapid thaw, and open, windy weather, is usually more disastrous than a good sharp frost when the ground is well covered with snow. In fact, the injuries done here may be more ascribed to the changing system than to the severe one. But much damage was done, nevertheless; for several plants that had been accustomed to withstand the ordinary winters were killed this last one. Yet not more than was done in the winter of 1852-53, or rather the spring of that winter, for up to the 10th of February, some of the most delicate plants of the flower-garden remained unhurt, except by the continuous damp which rotted them off. Consequently, I took cuttings from several things at that time, all of which grew, including *Scarlet Geraniums*, and *Mangle's Variegated* variety, and from the open ground, too, quite unprotected. This was an exceptional case; for I do not remember any former season in which frost was so slow in visiting us. However, it did come immediately after the time mentioned above, and with a vengeance, too, for it destroyed plants which had stood the three or four preceding winters, leaving little or nothing, in fact, for the last one to do, except such plants as had been turned out in the intervening time; and it is needless to say they all suffered, only the loss of the preceding winter was much more than the last one; for large, bushy plants of *Cytisus*, and *Coronilla glauca*, which had stood some two or three winters, and attained a goodly size, and at the time of frost setting in were just coming into flower, were completely cut down by the frost. This I attributed, in part, to the excited state they were in at the time severe weather came upon them, as well as to the intensity of the cold. Whatever the cause, it was so, and they perished entirely, as, likewise, did the *Veronica Lindleyana*, and other species which had likewise stood the preceding winter; while in the flower-garden here, some plants of the old yellow and other *Calceolarias*, which had braved several seasons, were quite cut off this one. And of course I have to report the same of *Verbenas*; but some old plants of *Fuchsia Riccartonii*, which have stood uncut down for several years, escaped both the two last winters, with only, perhaps, a little more of their tips destroyed than on former occasions, and they have assumed a sort of scraggy, deciduous, shrub-like appearance, by no means inviting in mid-winter. Neither do they flower one whit the sooner for being left in that way, only, I think they sometimes bloom more abundantly, but I am not quite sure of that. I may observe, that they get no covering whatever, and no other attention than the dead wood cut away in spring when the live portions show themselves.

Now, in reporting that we were not visited with so intense a frost the last winter as some districts in the kingdom were, I by no means mean to say that we got off uninjured; for the cold, late spring proved as detrimental to our hardy fruit-trees as the winter's frost

did to tender plants; certainly not killing them all outright, but many of them were so far injured as to require some years ere they will recover their position again, and some never will, and have, ere this, been taken up and destroyed. I mean certain Apple, Cherry, Pear, and Plum-trees, belonging to various parties in the neighbourhood, while in the garden and grounds here, a corresponding injury was done to wall fruit-trees, *Pinuses*, and other things. But the harm done to the Pines, &c., was much less than has been reported elsewhere. The only adult specimen that I believe was, in fact, hurt by the frost, was *P. excelsa*, but I am not certain but its after shabby appearance might arise from some other source. Certainly, all the *Deodars* escaped unhurt. The *Araucaria Braziliensis*, usually esteemed a tender species, did not seem the least hurt, although it is fair to say that its growth is very slow; in fact, I think our situation is too dry for the *Araucarias*, for, although we have the *A. imbricata* species twenty feet high, and every way beautifully proportioned, still I think it would have been higher had the situation been a damp one. A small plant, about two feet high, of *Cupressus funebris*, was hurt at the tips, but has grown away beautifully since. *Taxodium sempervirens*, also a small plant, was injured, but I do not think much of this as an ornamental plant. Still less do I admire the *Cryptomeria japonica*, which, though a large and healthy tree enough, looks so shabby for quite six months in the year, and it cannot be from the severity of the season, for it assumes its rusty-looking mantle long before severe weather sets in. It seems to bear seeds at a very early age, for the tree we have has had cones, or rather globules, on for the last three or four seasons. It is not, however, a quick grower, but if it would only retain its colour, its form and habit is, on the whole, graceful and good.

As I purpose, at an early period, to describe the *Pinuses* here at more length, I will just observe, that *Pinus insignis*, *Sabiniana*, and *ponderosa*, are the most conspicuous we have, for size and robustness of growth, as well as appearance, unless it be the *Deodars*, which thrive remarkably well; while on the other hand, *Abies Douglasii* will scarcely grow, thus proving that it likes a damp situation. Nevertheless, the great mass of species seem to relish it, and it is, probably, owing to the dry and partially elevated position that they stand the winter so well; only I may observe, that such species as *A. Webbiana*, *pectinata*, and one or two others, which bud early, are apt to lose their buds, in consequence of the late frosts, or other causes, which is a sad drawback to their otherwise beautiful and distinct kinds; whether such stopping of buds has a tendency to bring on fruitfulness or not, I cannot say, but one or two trees of *Pectinata*, which have lost their leaders more than once, and been obliged to furnish others, have formed cones this season, which they promise to fruit also; but more of this hereafter.

Without entering into a list of all the plants killed the last winter, I may sum up, and say, it was not more destructive that way than the preceding one. Neither were the late spring frosts any more intense than usual, for we had none of those memorable frosty mornings, followed by bright sunshine, which have been reported as so destructive in many other places; but instead of that, we had a long succession of dull, cold weather, equally hurtful to the blossom as a sharp frost, and, certainly, more so to the tree. This dull period was, more especially, observable in May and June. March and April were, on the whole, fine and dry months, with more of clear sunshine than the two following ones; a little sunshine at the end of June, with an interval of showery, dull weather the beginning of July, followed by a few very hot days in the middle of it, or rather towards the end, alternating again with showers early in August, which, however, cleared up the second week,

and a period of settled fine weather following, has induced our weather sages (in spite of their grumbling) to call the season, on the whole, a favourable one. Certainly, the effects of the last month or five weeks has been beneficial, to an extent that will tell another season as well as this one. Fruit-trees have recovered wonderfully, and few people ever remember flower-gardens more gay, while many things in the vegetable-garden line have attained an unusual growth. The *Brocoli*, and other things, where the ground has not lacked moisture, having grown very much, and it is needless to say, the most important product of any has been both plentiful and good. Now, with all these blessings, we ought not to grumble at something crossing our views in the spring; for after all is said, the party who holds the balance must do it in a very unfair way who does not aver that the good far outweighs the evil, even when to the latter we add all that grumbling at neutral things, which, as a nation, we are supposed to be addicted to, and the present suspense in that way will, very probably, not be of long duration.

J. ROUSON.

BEDDING-OUT IN THE FLOWER-GARDENS AT THORNHAM HALL, SUFFOLK.

HAVING great pleasure in the perusal of the accounts of flower-gardens and their occupants, I beg to give (for the gratification of others, like myself) a brief description of the plants used for bedding here. The names of the plants are taken as one walks by the side, from the mansion. Nearly all of the following beds contain from two to three hundred plants each. Those marked with an asterisk have been much admired:—

- 1 Geranium, Frogmore.
- 2 *Salvia*, patens.
- 3* *Lobelia*, ramosoides; splendid for beds or borders.
- 4 Geranium, gold-edged.
- 5 Geranium, Mangle's Silver; fine for beds or borders.
- 6 *Verbena*, Rubens; one of the best for bedding; very compact.
- 7 *Verbena*, Defiance; fine, in large masses.
- 8 *Petunia*, seedling; good white.
- 9 *Petunia*, Crimson King; fine colour; much diseased here.
- 10* Geranium, Unique (Rollinson's); very fine.
- 11* Geranium, White Ivy-leaved; beautiful variety.
- 12* Geranium, Punch; first rate; many of the individual blooms measuring 16½ inches in circumference.
- 13 *Calceolaria*, Rugosa; good old bedding variety.
- 14 *Agathæa*, celestis; compact.
- 15* Geranium, Mountain of Light; a most beautiful variety, all that can be desired in point of contrast.
- 16 *Verbena*, Lady of the Lake; good bedding sort.
- 17* Geranium, Flower of the Day; which it certainly is; in fact, no parterre is complete without it.
- 18 *Lobelia*, ramosoides.
- 19 *Fuchsia*, Globosa; good old bedding variety.
- 20 Geranium, Mangle's Silver; very pretty.
- 21 Geranium, Golden Chain; fine for borders.
- 22 *Verbena*, pulchella; blue, compact, and good.
- 23 *Verbena*, White Perfection; fine white.
- 24* Geranium, Tom Thumb; plants two years old.
- 25 Same as 24.
- 26 *Verbena*, Iphigene; good bedder.
- 27 Same as 26.
- 28 Geranium, Tom Thumb.
- 29 Same as 28; the four beds of Tom Thumb are all round a fountain, and are complete masses of bloom, proving that old plants are so far preferable to young ones.
- 30 *Verbena*, White Perfection.
- 31* *Verbena*, pulchella; dwarf blue variety.
- 32 Geranium, Golden Chain.
- 33 Geranium, Mangle's Silver.
- 34 *Fuchsia*, Globosa.
- 35 *Lobelia*, ramosoides; a general favourite.

- 36 Geranium, Flower of the Day.
 - 37* *Verbena*, Nationale; pink.
 - 38* *Heliotropium*, Gem; Salter's, very good; requires to be planted rather thick.
 - 39 *Calceolaria*, rugosa.
 - 40 Geranium, Ceriso Unique; planted in pots; it is quite unique.
 - 41 Geranium, florabunda; admired by all that see it; quite the ladies' favourite.
 - 42 Geranium, Gold-edged; rather naked looking.
 - 43 *Petunia*, seedling; white.
 - 44 *Verbena*, St. Margarette; one of the best for bedding.
 - 45 *Verbena*, White Perfection.
 - 46 *Lobelia*, ramosoides.
 - 47 *Salvia*, patens.
 - 48* *Calceolaria*, Kentish Hero; the Hero of its class; blooms of which require thinning two or three times during the summer, otherwise the plants exhaust themselves so much.
 - 49* *Calceolaria*, Sultan; a noble variety; this, like the Hero, requires thinning, and rich food.
 - 50 *Fuchsia*, old Scarlet variety; with scarcely a bloom on.
 - 51 *Oenothera*, macrocarpa; fine on poor soil.
- The following are beds of the same size, with a border to each.
- 52 *Fuchsia*, globosa; border, White Alyssum.
 - 53 *Verbenas*, several varieties; border, *Gazania* uniflora.
 - 54* *Calceolaria*, rugosa, and a bronze-coloured variety; border, *Lobelia*, erinus; these two planted together have a charming effect.
 - 55 *Fuchsia*, old Scarlet; border, White Alyssum.
 - 56* Geranium, Mangle's Silver, Harkaway, and *Lobelia*, ramosoides; border, Geranium, Annette; a very pretty, basket-like bed.
 - 57* Geranium, Graveolens; *Verbena*, Defence; and *Heliotropium*; border, White Alyssum.
 - 58 *Calceolaria*, bronze colour; border, *Kayii*.
 - 59* Geranium, Mangle's Silver; border, *Lobelia*, ramosoides.
 - 60 Geranium, Frogmore; border, white Alyssum, and *Lobelia*, ramosoides; rather singular.
 - 61 Same as 60.
 - 62 *Fuchsia*, Globosa; border, white Alyssum.
 - 63* Geranium, Flower of the Day; *Fuchsia*, Tom Thumb; border, *Lobelia*, ramosoides; very good.
 - 64 *Calceolaria*, bronze colour, and rugosa; border, *Kayii*.
 - 65 Geranium, Graveolens; *Verbena*, Defiance; *Heliotropium*; border, white Alyssum.
 - 66* *Calceolaria*, rugosa, and bronze-mixed; border, *Lobelia*, ramosoides.
 - 67* *Verbena*, Defiance; white perfection; border, *Gazania*, uniflora.
 - 68* *Salvia*, patens; border, *Calceolaria*, rugosa.
 - 69 Same as 68.
 - 70* Geranium, Mangle's Silver; *Verbena*, venosa; border, *Lobelia*, ramosoides; very good.
 - 71 *Fuchsia*, Old Scarlet.
 - 72 *Gaillardia*, *Petunia*, *Calceolaria*, and hybrid bedding Geraniums; border, Box.
 - 73 Marigolds and Asters; border, Ivy.
 - 74 Same as 73.
 - 75 Same as 72.

The following are much smaller beds, and average twenty plants to each bed; part of the walks here are covered with pounded brick-dust, and part with pounded oyster shells, which gives them a novel and nice appearance.

- 76 *Calceolaria*, rugosa.
- 77 Geraniums, mixed sorts.
- 78 *Verbenas*, mixed varieties.
- 79 *Heliotropium*, cornua.
- 80 Geranium, Frogmore.
- 81 Alyssum, variegated.
- 82 *Calceolaria*, bronze colour and rugosa.
- 83 *Salvia*, patens.
- 85 Geranium, Tom Thumb.
- 86 *Calceolaria*, bronze colour and rugosa.
- 87 Geranium, Frogmore.
- 88 Alyssum, variegatum.
- 89 *Verbena*, mixed varieties.
- 90 *Heliotropium*.

- 91* *Calceolaria, sulphurea splendens*; a beautiful dwarf variety.
- 94 *Verbena, Rubens.*
- 95 *Geranium, Nosegay.*
- 96* *Verbena, Pulchella*; fine for geometrical gardens.
- 97 *Geranium, Cerise*; unique, in pots.
- 98 *Verbena, White Perfection.*
- 99 *Lobelia, ramosoides.*
- 100 *Geranium, pink*; Ivy-leaved.
- 101 *Oxalis floribunda*; very pretty.
- 102 Same as 100.
- 103 *Lobelia, ramosoides.*
- 104 *Verbena, Rubens.*
- 105 *Geranium, Nosegay.*
- 106 *Verbena, Pulchella.*
- 107 *Oxalis, floribunda.*
- 108 *Geranium, Tom Thumb.*
- 109 *Geranium, pink*; Ivy-leaved.
- 110 *Verbena, Rubens.*
- 111 *Calceolaria, rugosa.*
- 112 *Lobelia, ramosoides.*
- 113* *Geranium, Diadematum*; very good.
- 114 *Verbena, Rubens.*
- 115 *Calceolaria, rugosa.*
- 116 *Verbena, Pulchella.*
- 117 *Verbena, White Perfection.*
- 118 *Geranium, Punch*; in pots.
- 118 *Geranium, Tom Thumb.*
- 120 *Lobelia, ramosoides.*
- 121 *Alyssum, variegatum.*
- 122* *Verbena, Andrew*; beautiful for bedding.
- 123 *Gazania, uniflora*; fine on rock-work.
- 124 *Geranium, Tom Thumb.*
- 125 *Verbena, Rubens.*
- 126 *Verbena, Jean d'Arc.*
- 127 *Oenothera, macrocarpa*; very fine.
- 128 *Lobelia, ramosoides.*
- 129 *Cuphea, platycentra*: best on poor soil.
- 130* *Verbena, M. Paquin.*
- 131 *Alyssum, variegatum.*
- 132 *Lobelia, ramosoides.*
- 133* *Geranium, Harkaway*; Gooseberry-leaved *Geranium*, very showy.
- 134 *Verbena, Emperor of China.*
- 135 *Verbena, Mariani.*
- 136 *Lantana, Sellowii.*
- 137 *Lobelia, Erinus.*
- 138 *Verbena, mixed varieties.*
- 139 *Lobelia, ramosoides.*
- 140 Same as 138.
- 141 *Geranium, pink, Ivy-leaved.*
- 142 *Verbena, Rubens.*
- 143* *Verbena, Seymourii*; very compact.
- 144 *Geranium, Ivy-leaved.*
- 145 *Verbena, Rubens.*
- 146 *Verbena, mixed.*
- 147 *Lobelia, ramosoides.*
- 148 *Verbena, mixed.*
- 149 *Cuphea, strigulosa.*

On the whole, I may add, that I never knew bedding-plants flower so freely as they have this season. Certainly, the weather (at least, the latter part of it,) has been very much in their favour. Notwithstanding, if the beds are not in good condition, and the plants strong, healthy, and well inured previous to their being planted out, water-pot-labour is very much increased, and disappointment is almost certain to ensue.

However, the watering affair is about over for this season, and the chief business in this department is the preparation for another great campaign.

I may also add, that wall-fruit has been very abundant in this locality. Bush-fruit, also, has been very plentiful. Potatoes are much better than was expected; and never were more splendid crops of grain harvested in such beautiful condition.

In conclusion, I may acknowledge that I (with many others) have gained many a scrap of practical knowledge from the valuable pages of *THE COTTAGE GARDENER*.

May it long continue to give such practical information, is the earnest wish of
J. PERKINS.

25th September, 1854.

P.S.—With Mr. Fish, I can confidently recommend the *Sanvitalia procumbens* and *Saponaria calabrica* for beds or borders; but by some mistake they are not in the arrangement here this season. I think the *Oxalis Rosea* is likely to become a favourite for small beds.—J. P.

YEOVIL POULTRY EXHIBITION.

THE second Exhibition of the Yeovil and West Somerset Association for the Improvement of Domestic Poultry, was held in the Market House, Yeovil, on Wednesday, September 20th. The following is a list of the prizes:—

Class 1.—DORKING (Coloured).—First prize, Mrs. Harris, Yeovil. Second prize, W. Pope, Compton Pauncefoot.

Class 2.—DORKING CHICKEN (Coloured).—First and second prizes, Wm. Pope.

Class 3.—DORKING (White).—No entries.

Class 4.—DORKING CHICKEN (White).—First prize, Mrs. J. Longman, Yeovil. Second prize, R. T. Williams, Yeovil.

Class 5.—SPANISH.—First prize, D. Parsley, Stapleton, near Bristol. Second prize, Francis Hawkins, Woolstone.

Class 6.—SPANISH CHICKEN.—First prize, D. Parsley, Bristol. Second prize withheld.

Class 7.—COCHIN-CHINA (Buff or Cinnamon).—First prize withheld. Second prize, Thomas Moore, Yeovil.

Class 8.—COCHIN-CHINA CHICKEN (Buff or Cinnamon).—First prize, H. L. Bean, Asheott, near Glastonbury. Second prize, Thomas Moore, Yeovil.

Class 9.—COCHIN-CHINA (Any other colour).—First prize, Cyrus Clark, Street, near Glastonbury. Second prize withheld.

Class 10.—COCHIN-CHINA CHICKEN (Any other colour).—First prize, Francis Hawkins. Second prize, Cyrus Clark.

Class 11.—MALAY.—First prize, James E. Marshall, Belmont, Taunton. Second prize, Wm. Manfield, jun., Dorchester.

Class 12.—MALAY CHICKEN.—First prize withheld. Second prize, W. Manfield.

Class 13.—GAME (Reds, Blacks, Black-breasted, and other Reds).—First prize, F. Hawkins, Woolstone. Second prize, Joseph Brutton, Yeovil.

Class 14.—GAME CHICKEN (Reds, Blacks, Black-breasted, and other Red).—First prize, J. Brutton, Yeovil. Second prize, Charles Edwards, Brislington.

Class 15.—GAME (Any other variety).—First prize, F. Hawkins. Second prize, Joseph Brutton.

Class 16.—GAME CHICKEN (Any other variety).—First prize, John F. Mortimer, Plymouth. Second prize withheld.

Class 17.—HAMBURGH (Golden-spangled).—First prize, T. M. Gunn, Bridport. Second prize, C. Edwards, Brislington.

Class 18.—HAMBURGH CHICKEN (Golden-spangled).—First prize, T. M. Gunn. Second prize, T. P. Edwards, Lyndhurst.

Class 19.—HAMBURGH (Golden-pencilled).—First prize, Rev. T. Newbery, Hinton St. George. Second prize, Francis Hawkins.

Class 20.—HAMBURGH CHICKEN (Golden-pencilled).—First prize, Charles Edwards. Second prize withheld.

Class 21.—HAMBURGH (Silver-spangled).—First prize, Charles Edwards. Second prize, John Gee, Paington.

Class 22.—HAMBURGH CHICKEN (Silver-spangled).—First prize, T. M. Gunn. Second prize, R. T. Williams, Yeovil. Extra second prize, T. M. Gunn.

Class 23.—HAMBURGH (Silver-pencilled).—First prize, John Marshall, Taunton. Second prize, Wm. Pope.

Class 24.—HAMBURGH CHICKEN (Silver-pencilled).—First prize, Richard Genge, Waterson. Second prize, F. H. Aberdin, Honiton.

Class 25.—POLAND (White-crested).—First prize, T. P. Edwards, Lyndhurst. Second prize, C. Edwards, Brislington.

Class 26.—POLAND CHICKEN (White-crested).—First prize, T. P. Edwards. Second prize, J. Newick, Hinton St. George.

Class 27.—POLAND (Golden).—First and second prize withheld.

Class 28.—POLAND CHICKEN (Golden).—First prize, C. Edwards. Second prize, Cyrus Clark.

Class 29.—POLAND (Silver).—First prize, C. Clark. Second prize, C. Edwards.

Class 30.—POLAND CHICKEN (Silver).—First and second prize, Charles Edwards.

Class 31.—BANTAMS (Gold or Silver-laced).—First prize, W. Tomkyns, Yeovil. Second prize withheld.

Class 32.—BANTAM CHICKEN (Gold or Silver-laced).—No entries.

Class 33.—BANTAMS (Any other variety).—First prize, T. Moore, Yeovil. Second prize, E. H. Burge, Taunton.

Class 34.—BANTAM CHICKEN (Any other variety).—First prize, E. H. Burge. Second prize withheld.

Class 35.—TURKEYS.—First prize, Charles Edwards. Second prize, Miss Julia Milward, Newton St. Loe.

Class 36.—GEESSE.—First and second prizes, Mrs. E. Brook, Key Farm, Yeovil.

Class 37.—DUCKS (Any variety).—First prize, Henry Lucas Bean, Ashcott. (Aylesbury.) Second prize, John Marshall, Belmont, Taunton. (Rouen.) Extra second prize, Thos. Moore, of Yeovil. (Aylesbury.)

Class 38.—FOR THE BEST COLLECTION OF PIGEONS.—Prize, to Thomas Twose, Bridgewater.

ANY OTHER DISTINCT BREED OF FOWLS.—First prize, John Marshall, Taunton. (Brahma Pootra.) First prize, Mrs. E. Harding, Speckington. (Persian.) Second prize, Mrs. E. Harding. (Persian.) Second prize, T. M. Gunn. (Black Hamhurgh.) Second prize, Wm. Manfield, jun., Dorchester. (Rumpless.)

FRENCH NOSEGAYS.

I was quite delighted with the article on "French Bouquets," at page 461, by T. F. Keir. I could not write a better one myself if I had gone to Paris on purpose. I have seen a thousand nosegays in each of the seven forms he describes, not after they were made, but in the actual doing of them. I hope all the lads and lasscs who read *THE COTTAGE GARDENER* "ayant the Tweed" will learn to make some of them at least. Most of the young ladies and gentlemen all over England do a good deal that way: Covent Garden is also fast improving in this branch; how they get on in Erin, we never hear. When I was, during the other day, under the great toe of the first, or some King of Kent, in the Crystal Palace, I saw some large nosegays being made behind the counter, of very simple flowers, such as are reported from Paris, by one, or rather two of the young women waiters; the one picking out such and such flowers from a heap of them, and the other making them into table-nosegays for dinner. The style was pyramidal, the manufacture was unexceptionable; but the colours were not in contrast or in harmony: still, most of the people round me, and they all looked as being better off than myself, praised these nosegays very much. I said nought, for no one asked my opinion; but I thought to myself, this is just like a beautifully-written letter full of bad spelling and worse grammar; but I lost sight of the subject in the next Court, and would never have thought of it were it not from reading that communication from Paris. We want more cultivation in nosegays, certainly; but we shall not get on so well by finding fault as by keeping the subject alive in an off-hand manner; and all I want at present is, to drive a peg in the wall for P. F. Keir to hang another article on it, of the same stamp, when his leisure will allow him. The greatest difficulty here is the actual work, or construction of a nosegay. There is as much art and care required for building a nosegay as are necessary to build a house: the two styles are opposite,—nosegays being built from top to bottom. How is the foundation laid? How put on, and what are the mortar, nails, glue, hinges, locks, and knockers?—D. BEATON.

THE SEBRIGHT BANTAM.

MANY and varied have been the statements in explanation of the origin of the Sebright Bantam. None, perhaps, have been altogether satisfactory; but remembering the caution with which the system pursued by the individual whose name they have since borne was guarded from publicity, this need not excite surprise.

Among the more dubious of these accounts, one of a startling nature has lately been advanced, which seems, indeed, so contradictory to all analogical reason on this subject, that, whether correct or otherwise, it should be noticed by the Poultry literature of the day. We refer to a statement that the late Sir John Sebright and others, who occupied themselves in the same task, produced the Laced Bantam by crossing other Bantams with the Polish Fowl (the Spangled variety, we presume, is here meant), and that occasional re-crossing with the Black Bantam was also another part of the process.

Without actually trying the experiment, it should not be asserted that such an intermingling of breeds would certainly fail to give the desired result; but surely a vast majority of poultry-breeders would regard with the utmost incredulity the success of such attempts either to produce, or to continue, a race of Laced Bantams. The top-knot and comb of the Polish, indeed, would involve the cradication of other points beyond those which, in the supposition of the Spangled Hamburgs, sometimes considered to have entered into the composition of the laced Bantam, would have to be got rid of. At recent Exhibitions, it has been a common subject of remark that, for the sake of fresh blood, the Spangled Hamburgs, especially the Golden ones, have been crossed with Bantams; but the experiment has hardly been sufficiently successful to lead to its repetition. Those who have practised this course, however, would have been encouraged by the presence of characteristics in some Hamburgs, where the square tail and the absence of hackle betokened points of resemblance to the essential properties of the Laced Bantam, which were altogether wanting in the Polish, not to dwell on the comb and top-knot of the latter.

But is it not far more probable that these Laced birds are "pure Bantams," though evidence may be wanting to trace them back, either to the Nankin, the Spangled, or any other variety of that family? If originally produced by the intermixture of a larger fowl, more particularly in the instance of the Polish, there would be, at least, an occasional recurrence to the features of such an ancestor, of which, with all the present shortcomings of the Laced birds, there is no sign. The tokens of a cross, indeed, are manifest in the constant result of breeding in-and-in, when the Laced Bantam quickly loses its peculiarity of marking, and becomes spotted, or irregularly spangled, and at times a yellow, resembling the plumage of the Nankin bird.

If the derivation of the Laced Bantam from the Polish should be grounded on the fact that feathers (the wing-coverts particularly) are found more perfectly laced in that latter bird than in any other fowl, the other difficulties are too lightly compensated, and it would, moreover, be no arduous task to select Spangled Bantams, more or less laced on that part of their feather, without having the incumbrance of comb and top-knot to be banished, and how improbable would be success in such an endeavour requires no proof to those who are anyways acquainted with the subject.

But if the obstacles to the statement alluded to are not founded in fact, a new feature is presented to poultry-fanciers, and the disappointment of those who have been sanguine in the permanency of characteristics in cross-bred fowls may yet be overcome. These remarks are necessarily but a very brief reference to the explanation of a confessedly doubtful point, and very possibly some of the correspondents of *THE COTTAGE GARDENER* may be able to quote facts in support or contradiction of the special circumstances that have been offered in the statement alluded to.

The writer's own conclusions are certainly adverse to the idea of an ancestral connexion between the Laced Bantam and the Polish Fowl; nor would his way be clearer towards recognising the utility of the blood of the Black Bantam for the continuance of the former variety.

W.

DEFORMED EGGS—STALE EGGS.

HAVING been given to understand that deformed eggs will not produce a chicken, by gentlemen connected with Poultry breeding, I was induced to try the experiment by placing one in my machine, which was in when your representative called on me, he having marked the same.

I now beg to state, that the same egg has this morning produced a fine large chicken, of the Dorking breed, perfectly healthy. I shall preserve the shell for inspection, and any person wishing to see the same can do so by calling at my residence.

I have also read that stale eggs will generally produce deformed chickens; this I beg to protest against, having hatched four Turkey eggs, about six weeks old, which had travelled a great distance on two railways.

I have also, in my machine, four Musk Duck eggs, which

I understand are to remain in the machine for thirty-six days, and as soon as they are hatched, I shall have much pleasure in announcing the same.—CARLO MINASTI, 16, Brecknock-place, Camden-road.

LIME AS A REMEDY FOR ROUP.

ALLOW me, through the medium of your widely-circulated Journal, to offer a few remarks upon the article from one of your correspondents, in your September number of the 5th instant, respecting roup, &c. I beg to say, that I have a young Dorking similarly affected. The first symptoms are those described by your correspondent, namely, an affection of the head and throat. I have removed the worst of them, and after applying all the remedies that have been recommended in your Journal, have failed; those that I left in their own quarters are all doing well, after the following simple remedy, namely, applying daily a small portion of *quick lime*, strewed all over the roosting place just before they go to roost. I think the dust from the lime causes them to sneeze violently, thereby cleansing the nostrils more effectively than by any other means I have tried. If any of my brother amateurs will give it a fair trial, should they be so unfortunate as to require it, and publish the results through your Journal, I shall feel it a great favour.—ONE OF YOUR CONSTANT READERS, North of Lincoln.

QUERIES AND ANSWERS.

GARDENING.

GILLYFLOWER OF THE HIGHLANDS.

"In addressing you in my *nom de guerre* of 'Medicus Edin,' I did not expect that my long history of the 'case' would have been subjected to the ordeal of public criticism, by being printed, as Burns said of the 'chiel's notes,' or I would have been more chary of spinning so long a yarn, as you justly state, as well as more circumspect in my statements. I must confess my ignorance, till now, of the genus to which the term Gillyflower is generally applied, because, in my native country, the borders of the Western Highlands, it is the *Hesperis Matronalis*, and not any of the species of *Mathiola* which is known by that name; in fact, forty years since a Ten-week Stock was rarely, if ever, seen in a farmer's kail-yard; so that the appellation so flippantly used could not apply to the Stock. You must, therefore, consider me, no less than yourself, a disbeliever in the transmutation of genera; but I must again repeat the assertion, that the loose-spiked purple double Rocket, and the equally loose French-white one—not French Rocket or English either, though it may be Scotch—frequently come from the seeds of the single *Hesperis*, and are, therefore, scarcely worth the trouble of propagating by cuttings, or otherwise, any more than most of the Ten-week-stocks; not so, however, the old and densely-spiked double white Rocket, which is now so nearly extinct, in this part of the country at least, that I could only procure one small tiny plant of it this season, in one of the most extensive nursery grounds in the West of Scotland, and this I am afraid will not stand over the winter, as it continues to retain only its one single ray of leaves in contra-distinction to the former alongside of it, which, in less than six weeks, has become a close many-rayed tuft, from a couple of inches of this year's flower-stem, carelessly thrust into the open ground up to its single leaf and axillary bud.—M. D. EDWIN, Glasgow."

SIZE OF POTS.

"What does Mr. Beaton mean, at page 374, by 'full-sized pots?' What size?—VERAX."

[That size which is sufficient to keep the Geranium for five or ten years on Harry Moore's plan. One kind of Geranium requires a pot three times larger than another; the smaller pot is full-size, just as much as a larger one; a thumb-pot is a full-sized pot for some few plants. We never give the exact size of a pot for a specimen plant, because there is no rule on the subject.]

PLANTING PTERIS AQUILINA.

"I think your correspondent 'H. L.,' in THE COTTAGE GARDENER for to-day, No. 312, who wishes to make a plantation of the *Pteris aquilina*, will succeed better by transplanting the roots than sowing the spores; as, by the latter method, he will have to wait a considerable time before the plants are worthy the name of such.

"I have always found the roots very tenacious of life, particularly when growing in sandy peat, and when such soil has been used for making beds for American plants, &c., with the roots of Fern growing naturally in it, if great care has not been taken to thoroughly eradicate them, a plantation of *P. aquilina* is then formed when not wanted.—T. W. W."

POULTRY.

BUENOS AYRES DUCKS.

"On referring to the reports of various poultry-shows, I notice that in the class 'for any other variety of Ducks,' frequent mention is made of the 'Buenos Ayres' or 'Labrador' breed. Would you oblige me by saying if there are two distinct varieties of Ducks having these two appellations, or whether, in accordance with what I have always understood, the two varieties are one, and that the name 'Buenos Ayres' is that by which they are rightly called, that of 'Labrador' being wrongly applied? On looking into Mr. Dixon's work on Poultry, I see he says they are called 'Labrador,' 'Buenos Ayres,' or 'Black East-Indian.' He entirely discards the claim of Labrador to furnish us with any new variety of tame Ducks, and believing that our tame Ducks are importations from the east, he gives the preference to the *Indian* title, as nothing is more probable than that we received them from the east, *via* Buenos Ayres. I am anxious to know something more respecting these Ducks, as I have two apparently distinct varieties; I mean, as regards their form and general appearance. One variety is very small, and has thin, taper necks, with very small beaks; the other, besides being larger, has the neck much thicker, and carries the tail more erect; while in my smaller birds it is less elevated, and rather pointed to the ground.—AN OLD SUBSCRIBER, Taunton."

[There is but one variety of these birds, which are constantly misnamed "Labrador." Mr. Dixon's reasoning against such an appellation seems conclusive; and the only cause for the error appears to exist in the fact, that the Velvet Scoter, "*Anas fusca*," an oceanic Duck of remarkably brilliant black plumage, abounds on that part of the North American coast. We have little doubt of their East Indian origin, whence they might readily have been transmitted to Buenos Ayres. But Black East Indian seems the fittest designation with our present knowledge of the original geographical disposition of this species. Of your two varieties we should certainly be inclined to regard the smaller and more delicately-formed as the pure race, though we speak with diffidence in such cases, from not having the advantage of personal inspection. It has been a very general remark among poultry judges, that these East Indian ducks have greatly deteriorated of late, in no point, perhaps, more conspicuously so than with regard to their form, which has lost, in many instances, the symmetry and elegance which, in addition to the extreme beauty of their plumage, rendered them such general favourites a few years since. The coarse neck and bill, especially, are tokens of such degeneracy, which, in some cases that have come before us, has evidently been attributable to crosses with a common black duck. Their properties and characteristics are stated at length at page 296 of "The Poultry Book."]

WHAT DO YOU THINK OF THE CRYSTAL PALACE?

THIS is a question that has been frequently put and answered during the course of every twenty-four hours which have passed away since the doors of the Palace were flung wide for the public to view its many and varied contents. We may safely assert that the preponderating answers to this question have been approbatory; but we have heard many which are of a doubtful nature.

An opinion is entertained in more quarters than one that the Crystal Palace, though singular in some respects, though beautiful and instructive in others, does not, upon the whole, come up to what the public were led to expect, and that, after all, it is but an *extraordinary-ordinary* affair, as Canning once pithily remarked of Alderman Wood. Those who entertain this opinion may, it is presumed, be fairly divided into two classes—the class that will not, and the class that really cannot, see the beauty of an object when placed before them. To the first class we simply and respectfully suggest that they allow their pride or their prejudice, or both combined—for these are generally twin-born, and derive their existence from one common source—to blind their eyes and to warp their judgment. Having once proclaimed an opinion that the undertaking is a failure, they are unwilling to confess the error in judgment of which they have been guilty. The old proverb hits their condition exactly—"There are none so blind as those who won't see." To be consistent, this class of objectors ought not to open their eyes in broad day. They had better close them at once, and retire to the dark places of this world, until their pride and prejudice have evaporated, rather than deery what they are unwilling to look at, except through the medium of a distempered and distorted vision. Were we to reason thus with the "won't see" class of objectors to the Crystal Palace, their inconsistency would be more apparent than it really is at present.

To those who really cannot see the beauties of the great Art-temple at Sydenham, we shall write in a different tone. They do not wilfully close their eyes to the light, or they would deserve to be as Milton dejectedly, yet divinely, expresses it—

"Dark in light exposed
To daily fraud, contempt, abuse, and wrong ;"

and be entirely shut out from the really beautiful in art—from that new world which instruction alone can open up to the mind, and present in its true and living features.

There is scarcely a reader of *THE HOME COMPANION*, whatever may have been the *status* of his education, but remembers the first view of the first print in the first book that the tender mind could fairly understand. Were it the Bible, or "Bunyan's Pilgrim's Progress," or "Homer," or "Shakspeare," or even the much-dreaded old "Vyse's Spelling Book," the impression must have been equally vivid. To have read, for example, the narrative of Joseph being sold by his brethren to the Ishmaelites, and his subsequent prosperity in Egypt, was very charming: but what imparted a richer charm to the enjoyment was the print that, perchance, accompanied the text, however rude in conception and execution it might have been. It symbolised to the youthful mind the spirit of the subject much more readily and effectively than the plainest descriptive text, or the simplest narration could have done; and enabled the imagination to seize hold of its true meaning, when it would have been impervious to any other agency of an instructive nature. The same remark may be applied to the print of Christian on his way from the City of Destruction, to that which illustrated the capture of Briseis, and the dragging of Hector round the walls of Troy; and as to old Vyse, who that has gone through the spelling-course of his education forgets the quaint, old representation of "Brown, Jones, and Robinson," in the act of bathing, and the exquisite relief it afforded the young mind, when "used-up" with poring over long syllables and hard words, to ponder over its varied parts? A picture, or print, then, however clumsily executed, is more effective to the untutored mind than a highly-finished paragraph; it reaches the understanding by the shortest route, and commands attention when a more vague and undefined representation would most likely fail. Objects of general art have precisely the same effect upon the mind of the observer; and a piece of sculpture, conceived in the true feeling of genius, and executed in the spirit of beauty, will rivet the attention, while the most skilful and elaborate description of it would miss the mark.

The difficulty hitherto has been to diffuse these intellectual and highly-illustrative symbols, from their costliness, and from the difficulty of increasing them at a more economical rate, and of a more varied character. By the aid of science and art, however, the means of production have been

largely increased within the last quarter of a century; and instead of illustrative objects being confined to the comparatively few, they have now become disseminated amongst the long-expectant many, "whose appetite," for these once luxuries, naturally "grows by what it feeds upon." Since the philosopher has stepped out of his study to shake hands with the inmate of the workshop, and he who theorised upon practice has fraternised with him who disdained to practise upon theory, a rare change has crept over the industrial and intellectual world. The artizan, by this movement, is enabled to read and study works which were before inaccessible to him,—works which teach him how to augment the value of his labour by diminishing its severity. When books, moreover, with illustrations of a varied nature, and of a singular excellence, can be purchased for a few shillings; and when we have structures of diversified character, containing, in one form or another, the leading phenomena of every art-age since civilization dawned upon the human race; and when, moreover, these several phenomena are presented in the most attractive form, and prepared with the most ingenious skill,—the "can't-see class" of society ought rapidly to diminish, for surely the cold and cheerless winter of their ignorance is as susceptible of being changed by the sunny and cheering light of intelligence, when brought to bear directly upon it, as the ice-bound waters are to the returning influence of spring. A practical fact or so, however, will, perhaps, place this part of the subject in a still clearer light.

(To be continued.)

TO CORRESPONDENTS.

"AN HOUR WITH THE HOLLYHOCK" (*J. Oates*).—This work, by Mr. Paul, is published by Messrs. Piper, Paternoster Row; the price is only a few pence.

"H. B. S., MONMOUTHSHIRE."—We have a letter for this correspondent, if he will favour us with his present address.

WORK ON FLOWERS (*W. B.*).—What kind of work do you require? Coloured drawings, or directions how to cultivate them?

CUSTARD APPLE (*Busy Body*).—Our correspondent wishes to purchase a plant of this, the *Anona cherimalia*, to which she was accustomed in South America.

POMEGRANATES (*Blanche*).—These are usually sold by grocers, and not in Covent Garden.

JERSEY HAND PLOUGH (*J. Newland*).—It is not made in this country. Would not two men with their hoes do the same work more effectually, and nearly as quickly?

HUMEA ELEGANS, &c. (*E. H. C.*).—Move it into a pot at once; keep it in the greenhouse all the winter; plant it out next May, and it will flower splendidly. Autumn-sown *Phlox Drummondii* will continue in flower through next summer. In addition to *Salvia patens*, Chinese Larkspur, *Lobelia racemoides*, and *Campanula carpatia*, you may, as a *blue bedder*, grow *Salvia chamaedrioides*. We cannot, at present, give engravings of *Entrance Gates*.

MUSK PLANT (*E. H. Newland*).—This will not injure your *Rhododendrons*. *German Asters*, which will bear moving whilst in flower, would succeed your Sweet Williams.

FENCE (*Private*).—Fasten galvanised iron net in front of your iron hurdles, and let it extend eighteen inches above them. The fowls will not fly over it, as they do not see anything to perch upon.

VINES UNDER GLASS (*Borpyd*).—Buy Sanders' pamphlet, "The Culture of the Vine." It is published by Messrs. Benham and Reeve, Henrietta-street, Covent Garden.

VARIOUS (*D. M.*).—*Allamandas* may be grown in the vinery. What do you need about *Liliums*? Any one can grow them. Many plants have no English names; *Allamanda*, for example. We usually give them. *Vinesours* are a roundish-oblong, purple plum; in season about the end of September; very excellent for preserving, and much cultivated in some of our northern counties.

PICKLING PORK.—*J. Newland, Isle of Jersey*, says the air of the island is so damp that bacon will not keep. He will be much obliged by any one sending us for publication the recipe "for a mild pickle that will keep pork for six or eight months for family use."

FRUITERER (*A Housekeeper*).—Consult Pigot's Guide. Any fruiterer in Covent Garden would supply you.

FRUIT TREES (*A. Atkinson*).—If your letter has not been answered, we are quite sure that it was never received. You must write again.

NAMES OF PLANTS (*Oscar*).—1. *Tolpis barbata*, or Yellow Hawkweed. 2. *Verbena venosa*. 3. *Lobelia ramosa*; it may be hardy, but we should prefer treating it as a half-hardy plant. 4. *Aster cyanus*, one of the best of the Starworts. 5. *Lobelia cardinalis*. 6. *Penstemon campanulatus*. 7. A variety of the same. 8. *Chelone barbatum*. Of your *Climbing Rose*, train in as many of the shoots at full length as you require, and cut away all the others. You had better root out your old scrubby *Rhododendrons*, and plant young ones.

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THE COTTAGE GARDENER—ADVERTISEMENTS.

NEW BULB CATALOGUE.—E. G. HENDERSON

AND SON, of the Wellington Nursery, St. John's Wood, London, beg to inform the Public that their Catalogue of Bulbs is now published, and will be forwarded, post-free, on application; or a copy of it can be seen on reference to THE COTTAGE GARDENER of the 19th instant. September 22nd, 1854.

LISIANTHUS RUSSELLIANUS.—J. and J. Fraser

beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2s 6d each.

Lea Bridge Road, Essex, August 19.

CHRYSANthemUMS.—J. and J. FRASER

have a very superior Collection of the above, comprising the newest and best of Large-flowering and Lilliputian varieties. The plants are very strong, and will bloom well in the ensuing winter.

Lilliputians, fine plants 9s to 12s per doz.
Large flowering 9s to 12s ..
New French varieties of 1854, not yet bloomed in
this country 18s ..

Lea Bridge Road, Essex, August 26.

EARLY FLOWERS, adapted for Blooming In-

doors, and in the Borders in the winter and early spring.—The undersigned beg respectfully to intimate to the nobility, clergy, gentry, and the public, that they have imported a choice STOCK of DUTCH and other FLOWER BULBS, of the finest possible quality, and take the liberty of offering the following assortment for 10s, viz.—Half-a-dozen best Hyacinths for glasses, half-a-dozen good Hyacinths for pots, 50 Crocuses (four separate colours), 50 large double Snowdrops, half-a-dozen double Van Thol Tulips, half-a-dozen early Van Thol Tulips, one dozen double white sweet-scented Narcissus, half-a-dozen double Jonquils, one dozen winter Aconites, 12 splendid mixed Tulips, one dozen beautiful mixed double Anemones.

CLARKE and CO., Seedsman and Florists, 86, High Street, Borough, about thirty doors from London Bridge Railway Terminus.

The LARGEST & CHEAPEST ESTABLISHMENT

IN ENGLAND for *Geraniums* (show and fancy), *French Geraniums*, *Fuchsias*, *Verbenas*, *Fairy Roses*, *Chrysanthemums*, *Heliotropes*, *Cinerarias*, *Calceolarias*, *Primulas*, and other soft-wooded plants, is—THE FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN (near London). More than 250,000 PLANTS are there annually cultivated.

The stock of *Show Geraniums* exceeds 50,000 and comprises upwards of 750 Varieties; among which almost every known kind will be found. The newest sorts, such as Carlos, Virginia, Rosa (Foster's), Leah, Picta, Marginata, Empress, Ncatness, &c., can be had at 4s 6d each, or 50s per doz. The older varieties from 9s to 40s per doz.

Of *Fancy Geraniums*, there are upwards of 10,000, including 450 sorts, at prices surprisingly low.

Verbenas, of which more than 30,000 comprise the stock, are 8s per doz., for all the varieties sent out, in 1854, by Smith, Bragg, Chauvierre, Turner, Mockett, and others; and 6s per dozen for the older kinds.

The selection of *French Geraniums* consists of 40 distinct sorts (exclusive of those English Geraniums which some class with them), at 2s 6d each, or 25s per doz.

10,000 *Seeding Cinerarias*, from seed of first-rate flowers, at 4s per dozen, in 60-sized pots, all the named sorts. Also,

20,000 *Seeding Herbaceous Calceolarias*, now on hand, at 4s per dozen, in 60's. These flowers have been raised from the seed of the best of last year's stock, which received general praise.

An immense quantity of *Good fimbriated Primulas*, at 4s per doz., in 60's, and 6s per doz. in 48-sized pots.

Chrysanthemums (Lilliputian and large-flowering), at 6s and 9s per doz., for plants which will flower this season. Large, magnificent plants, at 18s and 15s per doz.; all the best sorts.

The foregoing have been selected as examples only, it being impossible, within the limits of an advertisement, to afford particulars of a stock so extensive. Catalogues will, however, be forwarded to all parts gratis.

Every possible exertion will be made to give most perfect satisfaction to all who may favour this Nursery with their patronage. None but thoroughly-established plants will be sent out; and full reliance may be placed on prompt attention and fair dealing. The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this establishment. JOHN WESTWOOD, Proprietor.

Terms, Cash; or a satisfactory reference.

NEW CLIMBING HYBRID PERPETUAL ROSE,

THE "DUCHESS OF NORFOLK." To be sent out for the first time about the end of October. WM. WOOD and SON have much pleasure in offering the above superb Rose to the notice of their Friends, feeling assured it will prove entirely distinct from any Rose at present known, and which cannot fail to give every satisfaction. The colour is a bright vivid crimson, the under side of the petals most delicately shaded with a fine glossy pink, presenting a pleasing contrast; but the most valuable property of this superb variety consists in its extraordinary vigour, and as a perpetual-flowering dark-coloured Climbing Rose surpasses any variety that has yet been offered.

Standards, Half-Standards, or Dwarf, will be supplied at 10s. 6d.

A very liberal allowance to the Trade.

N.B.—The above will be figured in the October number of "The Florist."

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THOMAS H. DOUGLAS is now prepared to send out the following NEW PANSIES and VERBENAS. Early orders are requested, as the stock is limited:—

PANSIES.

Sulphurea splendens (Fleming), straw, distinctly margined with blue; very pretty and attractive. (See *Florist* for August, 1854, under L. T. F. Berwick) 5 0
Aunt Chloe (Douglas) rich mulberry self, with red tinge round the eye, large, and of fine shape, extra 5 0
Ellen (Douglas) cream, broadly margined with purple, large, and of fine form; a bold flower 5 0
Bobo (Douglas) Fancy variety, blue, shaded off with white at the margin; very novel (See *Florist* for August, 1854) 3 6

VERBENAS.

Abdul Medjid (Mein), white silvery, bluish eye; pretty 2 6
Anne Jane (Mein), pure white, purplish-rose eye; very large 2 6
Constantia (Mein), light rose, yellow eye 2 6
Omer Pasha (Mein), pale pink, purple eye; pretty 2 6
Queen Victoria (Mein), cream, red eye, good truss; very novel 5 0
Sunset (Mein), beautiful bright crimson; very attractive 3 6
Zaire (Mein), white, carmine eye, improvement on *Duchess of Kent* 3 6

Or the set, 20s, hamper and package included.

Remittances, or references, from unknown correspondents. The usual discount to the trade.

MERCHESTON PARK, EDINBURGH, October 1, 1854.

SPLENDID NEW CINERARIA OCTAVION.—

JOHN KER, Florist, Landscape Gardener, &c., Bristol Road, Birmingham, has the pleasure to announce that he now has, ready to send out, plants of this truly magnificent Cineraria; it possesses more good qualities than any other, namely, a fine, dwarf, hushy habit; continues longer in flower, commencing in December; it will continue through the winter, till May, to send up dense trusses of large, beautifully-scented flowers, filling the whole house with their odour. Flowers large. Colours well contrasted; petals pure white, tipped with purple, broad, and well imbricated, disc dark; has been awarded a first-class certificate of merit by the Midland Floricultural Society, judges then present pronouncing it a magnificent variety; is favourably noticed in No. 289 of THE COTTAGE GARDENER. Plants 10s. 6d. each. Early orders solicited; many have been received, and will be sent out in rotation.

Post Office Orders payable at Birmingham.

THE BEST TWELVE HYACINTHS FOR POTS

or GLASSES. (Parcels if not less than 20s value, carriage free.)

The Best 12 HYACINTHS Imported (by name)	9s 0d
Fine Double Ditto for open ground (mixed)	4 6
CROCUSES (many sorts mixed) per thousand	12 6
TULIPS, fine, mixed, early for pots or borders, per 100 ..	5 0
ANEMONES, fine, double, mixed	5 0

And all other Bulbous Flower Roots at low prices.

W. CULLINGFORD, Seedsman, 1, Edmund Terrace, Ball's Pond Road, Kingsland, London.

GLASS for CONSERVATORIES.—Thos. Millington

requests attention to the present PRICES of SHEET GLASS, packed in 100 feet Boxes, Good Quality, about 15 oz. to the foot, Boxes 1s extra, but allowed for when returned.

Inches.	100 feet.	Inches.	100 ft.	Inches.	100 ft.
6 by 4	10½	by 8½	15	by 10	10½
6 " 4½	11	" 9	15½	" 10½	10½
6½ " 4½	11½	" 9½	16	" 10	10
6 " 5½	12	" 9	16½	" 10½	10½
7 " 5	12½	" 9½	17	" 10	10
7½ " 5½	12½	" 10	17½	" 10½	10½
8 " 6	12½	" 10½	18	" 11	11
8½ " 6½	13	" 10	18½	" 11½	11½
9 " 7	13½	" 10½	19	" 12	12
9½ " 7½	14	" 10	19½	" 12½	12½
10 " 8	14½	" 10½	20	" 13	13

Large Sheets for cutting up in Cases, at 2½d and 3d per foot.

T. M. has supplied large quantities to Mr. Rivers for Orchard Houses, &c.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars with and without covers.

Plate, Sheet, Crown, and Ornamental Window Glass; Crystal Glass Shades for Ornaments.

87, BISHOPSGATE STREET WITHOUT, LONDON.

(Same side as Eastern Counties' Railway.)

MATRIMONIAL INSTITUTION.—OFFICES, 12,

JOHN STREET, ADELPHI, AND 18, NASSAU STREET, NEW YORK.—FOUNDED 1846.—This Institution has been established many years (with great success) as a medium for the introduction of parties unknown to each other, who are desirous of forming matrimonial alliances, but who, from some cause or other, cannot find partners in their own circle of acquaintance suitable in position, &c. The strictest honour and secrecy is maintained in every case. Prospectuses, Applications, Forms, Rules, and every information, sent free to any address, on receipt of twelve postage stamps, by order of the Director, 12, John Street, Adelphi, London. LAURENCE CUTHBERT.

FRENCH MODERATOR LAMPS.—A very large

and superior stock now On Sale, at DEANE, DRAY, and CO.'s, (Opening to the Monument), London Bridge. Established A.D. 1700.

WEEKLY CALENDAR.

D M	D W	OCTOBER 10—16, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
10	Tu	Large Sword-grass Moth.	29.886—29.697	62—48	N.	05	17 a 6	17 a 5	7 10	18	12 55	283
11	W	Grey Shoulder-knot Moth.	29.717—29.657	58—42	N.E.	12	19	15	7 43	19	13 11	284
12	Th	Brindled green Moth.	29.634—29.634	57—49	E.	19	20	13	8 27	20	13 26	285
13	F	Marvel du jour Moth.	29.714—29.664	58—50	E.	08	22	11	9 21	21	13 40	286
14	S	Connecting Umber Moth.	29.745—29.672	64—36	S.	16	24	9	10 25	22	13 54	287
15	SUN	18 SUNDAY AFTER TRINITY.	29.657—29.522	58—42	S.W.	04	25	6	11 34	23	14 8	288
16	M	Mottled Umber Moth.	29.401—29.318	54—28	N.E.	32	27	4	morn.	24	14 21	289

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 59.7°, and 42.1°, respectively. The greatest heat, 76°, occurred on the 14th, in 1845; and the lowest cold, 25°, on the 15th, in 1843. During the period 104 days were fine, and on 85 rain fell.

WE now return to our observations on the different varieties of PEAS, which, from the pressure of other matter, have for some time been suspended. That which follows in the rotation we have hitherto adopted is the—

EGG PEA.

SYNONYMES.—*Black-eyed-Susan, Bean Pea.*

This is a strong and very robust grower, attaining from six to seven feet high, and generally with a branching stem. Each plant produces, on an average, about eighteen pods, which are almost always in pairs, and very rarely single. The pods are three-inches-and-a-half long, and about five-eighths-of-an-inch broad, round and plump, slightly curved, and narrow for their length. They contain from six to seven Peas in each, which are large and oval, like a Horse Bean; half-an-inch long, eight-twentieths broad, and the same in thickness, and when eaten raw are of a bitter or styptic taste. The eye of the seed is black, and hence the origin of one of the synonymes.

This is a most abundant bearer, and very prolific Pea, but for garden purposes is utterly worthless. At one time it was a very popular variety, when there was less choice than there is now, but it has long fallen into disrepute.

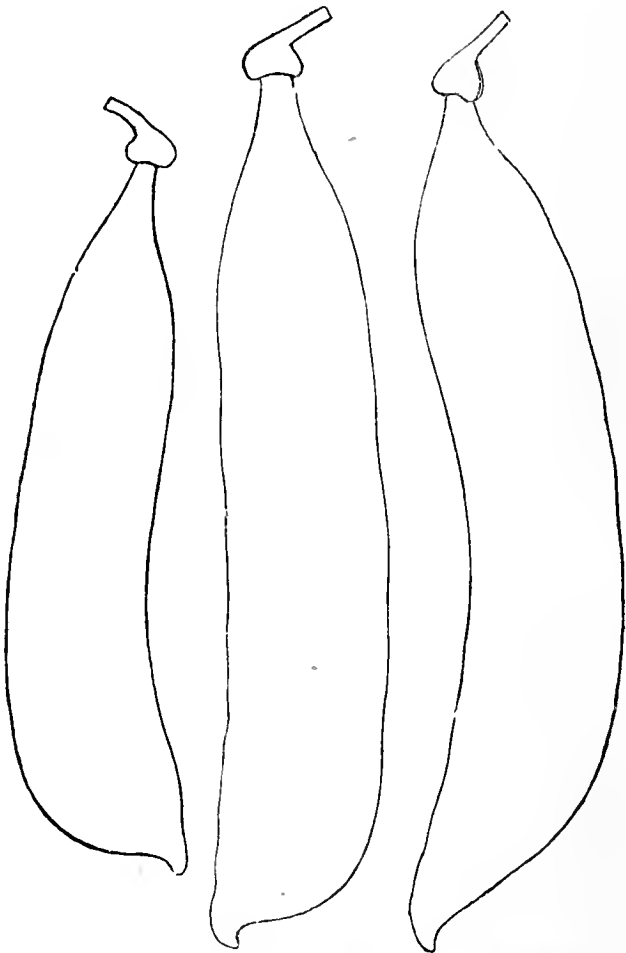
BRITISH QUEEN.

SYNONYMES.—*Hairs' Defiance, Tall White Mammoth, Erin's Queen.*

This is one of the best late Peas in cultivation. It belongs to the class known as Wrinkled, or Knight's Marrows, but is very much superior in every respect to all the old varieties usually called Knight's Marrows, being much more prolific and richly flavoured.

The plant is of a showy and robust habit of growth, from six to seven feet high; sometimes with a single, but generally with a stem which branches within nine inches or a foot of the ground, and is frequently furnished with two, and even three, laterals, which are of the same height as the whole plant. The pods begin to be produced at the first joint above the first lateral shoot, and are in number from thirteen to eighteen on each plant. In some instances, I have counted as many as thirty-one pods on a single plant at one time, just as the most advanced were fit to gather. The pods are generally single, but very frequently in pairs; from three-inches-and-a-quarter to three-inches-and-three-quarters long, and rather flattened and broad when first

fit to gather, but becoming more round and plump when more advanced. They are quite smooth, of a



EGG PEA. BRITISH QUEEN. BLUE SCIMITAR.

bright green colour, slightly curved, and wavy on the upper edge, and contain from five to seven immensely large Peas, which are not so close together as to compress each other; their size eleven-twentieths-of-an-inch long, nine-twentieths broad, and the same in thickness. The ripe seed is white, large, and wrinkled.

The seed was sown on the 5th of April, and the plants came into bloom on the 23rd of June. On the 2nd of July the slats were formed, and on the 18th the pods were fit to gather.

We cannot speak too highly of this excellent variety, which ought, under all circumstances, to be cultivated in every garden.

BLUE SCIMETAR.

SYNONYMES.—*Blue Sabre, Scimeter, Cimeter, Beck's Eclipse.*

This well-known variety is now less grown in gardens than it was at one period before the new Marrows were introduced. It is, however, very valuable, particularly to a market-gardener, or farmer, who supplies the markets with green pods, and it is now much more extensively grown for that purpose than for private use. But even for that purpose it is likely to be surpassed by the *Champion of England*, which is almost, if not quite, as productive, and a more richly-flavoured Pea. There are many of the large field-growers about London and in Kent, who supply the London markets, who have, in the two last seasons, grown the *Champion of England* in preference to the *Scimeter*.

The *Scimeter* is a strong and sturdy grower, attaining the height of two-and-a-half or three feet, generally with a single, but sometimes with a branching, stem. The foliage and pods are of a dark green colour, and the plants produce, on an average, from twelve to eighteen pods on each. The pods are from three inches to three-inches-and-three-quarters long, four-eighths-of-an-inch broad, very much curved and flattened. They are generally produced in pairs, but are frequently single, and contain, on an average, from nine to ten peas in each. The ripe seed is green.

The seed was sown on the 5th of April, and the plants bloomed on the 18th of June. On the 23rd the slats appeared, and on the 20th of July the pods were ready to gather.—R. H.

(To be continued.)

THE Monthly Meeting of the *British Pomological Society* was held on Monday, the 2nd instant, at the Rooms, 20, Bedford Street, Covent Garden, when it was agreed, that the first extraordinary meeting of the Society for the exhibition of collections of Fruits from different parts of the country shall be held on Monday, the 6th of November; the object of such exhibitions being to obtain from all parts of the country specimens of all kinds of Fruits, with the view of ascertaining their adaptability to the various latitudes, soils, and exposures of Great Britain.

The Secretaries were instructed to take immediate steps towards the formation of corresponding Committees for every county in England, Scotland, and Ireland, and the Channel Islands, for the purpose of carrying out the objects of the Society.

The following gentlemen were elected Members of the Society:—

Mr. Charles McIntosh, Dalkeith Palace.

Mr. Michael Saul.

Mr. Robert Osborne, Nurseries, Fulham.

Mr. John Adams, Brompton Park Nursery.

by the "*Derbyshire and Midland Counties*" Poultry Association, for their Meeting, commencing on the 30th of November next, and extending over the following day.

The classification is good, and the premiums in excess of those usually offered by local Societies of this description, and the rules very clearly and yet concisely stated. There are points, undoubtedly, in which we should consider that an improvement might have been effected; for instance, acquiescence in our old plea for greater liberality in respect of Geese, old and young, in their several varieties; nor would we have advised the total withdrawal of the Pigeon classes, an unvarying source of interest on those occasions, and probably, even in a practical view, of equal importance with the Bantam, and some of the mere fancy fowls. We do not understand the necessity of adding the description "*white-faced*" to the Spanish class, since it is clear no others could be there admissible.

The Dorkings and Game fowls shown at the last Derby meeting were of great excellence, and if the quality of the former, especially, has kept pace with the progressive improvement of that race in other parts of England, the Derby decisions may, possibly, afford some clue to the probabilities of Birmingham success.

THE COMPOST-YARD.

AMONGST all the auxiliaries of good gardening none is of greater importance than the Compost-yard; not that I would wish to resuscitate the idea that many kinds of soil are necessary; quite the reverse; I would rather point to what may be termed the economy of soils and composts. A department of this description must not be considered as simply devoted to loam, peat, &c., or what may be termed important articles. I must proceed to show that it should be a rallying point, on many occasions, for surplus materials which may come to hand; and which, although called, perhaps, common soil, or even rubbish, yet is not only applicable to a variety of purposes, many of these things containing a character not to be found in rich manurial matters. It may be well, in examining this matter, to inquire what are the materials most likely to find a place there, or for which it is really eligible; we shall then be in a position to understand our subject better.

Everybody knows that every really good gardener considers a GOOD LOAM indispensable in good gardening; and this is not mere empiricism, albeit the unknowing get confounded sometimes with the indefinite use made of the term "loam." It is all very well to say that the French or Belgian gardener uses chiefly peat, and that he succeeds admirably in cultural matters; but what has a good English gardener to learn from our continental brethren with regard to soils and their adaptabilities? One of the chief properties of using composts in which a loamy soil predominates is this, that in such composts vegetation proceeds with more steadiness, continuity, and certainty, inasmuch as a good sound loam is not so suddenly affected by the caprice of seasons. Loam, then, heath-soil, leaf-mould, manurial matters, and charred materials are the essentials of the Compost-yard, as far as the introduction of fresh materials is concerned; whilst the potting-shed should contain sphagnum, moss, guano, soot, sand, &c.

A few brief hints on these things, separately, may prove interesting to the inexperienced, and I must beg to glance at them in order. As to loam, and the period of obtaining

It rarely happens that prize lists are open to so few objections as is the case with that recently published

it, it may be at once observed, that one safe maxim is to obtain it wherever you can, without stealing it. Nevertheless, if I must choose my period for obtaining it, I should select a very dry time in March; next best, a dry time in September. Leams should always be obtained in a dry period; for little do many folks dream what mischief they do by handling some loamy soils when wet. Let any man take two turves of the same loam—the one dryish and mellow, the other wet; let him place the latter in the ground, and tread it with his feet, and let him then use the two turves separately for petting some choice plant: I will engage, that he will produce a much better uniformity or equalizing of material in his compost with the dry turf than with the wet and trodden one. And, unquestionably, if he pay attention, he will see a difference in the success of the two specimens, of course, both alike. The prime object, then, I conceive, in housing and husbanding loams, is so to work them as that they shall preserve that admirable porosity which is the conjoint result of atmospheric action and fibrous expansion, and which, destroyed by an ignorant mode of handling, cannot be easily restored. Leams thus obtained in a dryish state should be piled up in as sharp a ridge as possible in the compost-yard; say, a base of four feet, and rising to five feet at the apex, and then using a ridge-turf, cut on purpose, of any light, soiled turf, to throw off the rains; the ridge-turf overlapping a foot on each side, and well closed at top. When such comes to use, do not let your man cut and tumble it about anyhow, or he will soon spoil it, and waste much of it; also, see that it is cut by a sharp spade, in perpendicular sections, from one end, with the same care as in cutting hay.

SANDY HEATH-SOIL, PEAT, &c.—The former is by far the safest ingredient in general composts, although so many prefer peat; but in my opinion, where good heath-soil is obtainable, that peat may be generally, if not always, dispensed with, and its place in the compost usefully supplied by very old cow-dung, leaf-soil, &c. But this heath-soil requires a little preparation, and will be all the better if a year or two in the yard before using. It should have plenty of old heather on it, and if a little fern so much the better; just roughly mowing the fern and heather before cutting the turf. Now this I would cut when rather moist, and I am of opinion that quick-lime would be of good service here, dusted heavily on each layer of turves on the upper side. This would have a tendency to break down the fibres, which are very tough, and probably exercise a beneficial influence in regard of the acid, which, sometimes, renders peat soils, at least, somewhat unfertile.

LEAF-MOULD.—Of course this and the former are merely different forms of what our chemists term HUMUS; but although, chemically, they may possess great identity, yet, mechanically, they have a different effect. It must here be understood, that I do not wish to confine the ideas of the reader to decayed leaves alone, although such is, for general purposes, the best form in which to use it in composts. I use the term in a generic sense, as signifying almost any half-decayed vegetable matter, which, although mellow enough to blend intimately with composts, has not totally lost its organic character. Thus, old and spent tan, weeds of any kind reduced, very old straw, dung from which the chief of the droppings had originally been extracted, old thatch, &c.;—Such things, and many more, may be quoted as eligible for general purposes, their eligibility for present use depending mainly on the qualifications before alluded to, of being in what the gardener terms a mellow state. However, old tan is a thing to be handled with a little caution: undecomposed, it is understood to possess too much of the tannin principle; highly decomposed, it is powdery and loose when dry, and so clammy when wet, that it is too liable to clog that openness in composts

which is of the utmost importance. It is, however, very well as a stop-gap, and better adapted for dressing ground in a lean condition, where manures are scarce. Decayed leaves of a year or more, especially if they have been used as fermentative matters, make, perhaps, a better vegetable soil than other materials; a stock should always be kept in the compost-yard, and the heap, like other materials of a soluble character, should be kept in a conical form, and means taken to keep out rain.

MANURIAL MATTERS.—These, of course, are various, but horse and cow manure may be considered the chief. Horse-manure is seldom used as it comes from the stable-yard, being generally required for hotbeds, &c., from whence it becomes excellent material for any purpose. My practice is to chop it to pieces immediately it is removed from the hotbeds, for it breaks up much finer at that period than after receiving rains, and this minute division of its parts is of much importance. I think it may be held sound practice to mix the component parts of any compost so that the whole may become, apparently, a uniform mass, or, as far as the lumpy character of the fibrous materials will permit; besides this, I advise that whenever the horse-droppings are not particularly required to be retained in the dung from the stable-door, that they be shook out and removed to the Compost-yard. They make a capital material for many purposes, such as Vine-border dressing, the top-dressing of needy fruit-trees, and those newly planted, besides a variety of other objects. Thus much for horse-mannres, in two forms; and it may be observed that the hotbed dung is very frequently mixed with leaves, in which case it is even better adapted for composts than mere manure.

COW-DUNG is another important manure in this yard; it is eligible for very important purposes. Almost all plants that are of rapid growth, and are required to make high display, with a bold development of parts, enjoy a portion in their compost. It is considered cooler in its nature than horse-manure; consequently, composts containing it are less liable to dry up suddenly in our hothouses. This manure requires to lay in the compost-yard many months; indeed, the older it is the better. I find it good practice, when the heap is required for use, to turn and mix it with fresh-charred ashes; these introduced liberally, and the whole frequently turned and divided, speedily become a friable mass, and should be housed immediately. No rain should reach it afterwards.

CHARRED MATERIALS.—These, with me, have become so important, that I should not enjoy a peep into my compost-yard if it did not contain them. It is, I think, impossible to overrate the practice of charring all vegetable refuse that comes to hand systematically; not only on account of the invaluable mass of materials which this practice gives back to the gardens, but on account of the cleanliness involved in the practice. By it, there is not occasion for that filthy accumulation of rubbish which renders the yard a nuisance; and, moreover, if the process be rightly conducted, scarcely a seed from the weeds can ever vegetate; they are stewed in such a way as is by no means congenial to the seeds of weeds. For my part, I seldom use a compost for anything but a little of this material is contained in it; and for all seed-beds, on soils somewhat stubborn, it is excellent. *Char, then,* I say, three or four times a year, all vegetable refuse not required for any other purpose.

About the **MOSS, SAND, &c.**, I need say little. A few words, however, on soot and guano before I conclude.

Of course, I do not expect that every one is in a position to appreciate, off-hand, the value of what some gardeners term practically “priming;” but I can assure those who doubt, that I have experienced enough

of such practice to lead me to consider its use as one of the indispensables of high culture in many soils.

This priming is not an expensive affair, as might at first sight be supposed; for I have found, in practice, that a mixture composed of about ten parts *soot* to one of *guano*, possesses great power, and if so, I should advise old vegetable remains, highly decomposed, or what is termed humus, in a mellow state, to be added to the mixture, and thoroughly blended. It is adapted to almost any crop requiring a stimulus of greater action than can be expected from organic manures, unless highly decomposed. R. ERRINGTON.

PREPARATIONS FOR SPRING FLOWERS.

EVERY word about the autumn propagation of Roses, by cuttings in the open air, is, and may be understood as referable to all deciduous trees and shrubs as well as to the Rose itself: that is, to such of them as are known to grow from cuttings; therefore, as cuttings of all Roses, and other deciduous bushes, may be put in to the end of November, we may as well look to another branch of propagation which just now requires more immediate notice at our hands—the propagation of herbaceous plants to flower next spring and summer.

In a day or two, I purpose going to the Crystal Palace once more before the frost; but there is nothing there this season to learn about herbaceous plants or spring flowers. There are some mixed beds, it is true, in the transition-part of the garden, but the mixtures are not of herbaceous plants, so called, but of first, second, and third-rate plants of the bedding class; and they are there only as temporary helps to fill up the spaces between the permanent plants with which such-and-such beds were filled in a hurry last spring.

I have not either asked, or received, a single question, officially, about how anything is to be done in this public garden; therefore, I cannot say whether or not they intend to have some beds, or long borders of herbaceous plants; but I should think they must have something of the kind in view, although it may take another year or two before it can be properly attended to. No large establishment in the country is considered complete without a mixed arrangement of odds and ends; where a selection of bulbs, herbaceous plants, novelties to be proved, and all such things as have not been found to mass well together, are disposed of as they come to hand. Nothing seems to come amiss to the mixed borders, and few visitors go away without learning something worth minding from this part of a show-place. Hence the craving for the old, exploded system of having collections of plants without knowing it. We gather and scrape together from all available sources for our beds and borders, our hothouses, frames, and pits; but you never hear of turning out barrows-full of the rubbish thus got together without a change of government. Master and man are alike, until the latter breaks his own back, in the vain endeavour to compass all. Out he goes; then, new kings, new laws; and new brooms, &c., &c., for a while; but it all ends in the old story—"I want a good selection: but somehow or other I never succeed. I have too much of one thing—too little of what I really want. I must get a list of just what I want from THE COTTAGE GARDENER." But there is no royal road to the list-office, and no chance for manufacturing a fancy list, every body is so knowing. Nothing but the very commonest things can find a place in a good list, and not one out of a score thinks he ought to have anything that is at all common. Something out of the ordinary way is what is wanting; and some gardeners, who ought to know better, countenance all this waste and foolery, while truth and this secret lie in a nut-shell. Ten kinds of plants, arranged in ten

different ways by a skilful head, and a ripe eye, will produce ten times the effect of a hundred plants, dotted about at distances corresponding to the room necessary for each.

If we could but teach, or rather unteach, the system of planting herbaceous plants, we might hope to succeed in learning the true art of flower-gardening at last; but as long as the pulse is so quick as to start at the first idea of putting three plants of one kind together "in a knot," we must forbear to follow the rest like the sheep. No sooner said, than departed from, however; for at this very turn, I am going to show how to plant the best spring-flowering herbaceous plant we have—I mean the best varieties of the dwarf *Mimulus*.

People who have not seen a good assortment of these gay flowers, or who have only seen them under ordinary culture in pots, can form little idea of how well they look, and how well they hold on when heated differently.

In the first place, they must be divided, and fresh transplanted *every year*; they should not be disturbed in the spring, but they may be removed from the beds, or where they bloom, as soon as the flowers are over in June. If lumps or balls of soil are taken with the roots, they may then be laid out of the way, in the sun, or out of the sun. They will do anywhere, if they have free earth to run the roots into, and some water at first till they take to the change; but October is the only time in the year for dividing them, and for preparing and planting them for bloom.

They will do in large patches, or in single rows along the walks or round beds, or they may be planted all over a bed, or only in the open spaces between *Hyacinths*, early *Tulips*, and all spring bulbs, except the *Crocus*. A bed of *Crocus* makes such a crop of leaves, after flowering, as would smother the *Mimulus* outright; but a good thick edging of *Crocus* round a bed of early *Tulips*, and the spaces between the *Tulips* to be filled with the *Mimulus*, would almost begin blooming as soon as the *Tulips*; say about the middle of April, if the spring was fine; and as the *Tulips* were going out, the *Mimulus* would be about its meridian, pressing out on a dense edge of *Crocus* leaves, and doing away with the seedy appearance of the *Tulip* leaves; and they keep so long in bloom, that the *Narcissus* would be ripe enough for removal before the *Mimulus* had done blooming.

As many as twelve very distinct kinds of dwarf *Mimulus* may now be had, and twice as many, if one chooses to go into minute variations. They seem to be hardy enough, in light soil, to stand ordinary winters. In 1852, I had fifteen kinds from the Horticultural Society. They were very young at the end of September, but I had one-half of them out-of-doors, and the other half in pots, and sheltered; all that were in the pots I lost that winter, but those in the open ground did very well indeed. Of these I had some hundreds out all last winter without losing one of them. As soon as they began to flower, at the end of last April, I had to divide them for giving some away to my neighbours, but this next season I shall go on a different system. I shall divide my whole stock and plant my own rows this month, and put all the overstock in by the heels, for giving away to the neighbours; then, when they get a taste of them this way, they will look out for more kinds, seeing they are so useful; and in two or three years I should not wonder if Surbiton should become a noted place for the *Mimulus*.

They do not require a particle of rotten dung; if the soil is good they are better without it, because their growth will be more firm, and the frost will not be so liable to hurt them. This is so far fortunate, where they are used with bulbs, as I am quite sure that no bulb needs any dung near it; though all our spring bulbs like a good supply of rotten dung at the very bottom of

the beds, so that the roots may draw on it by the time the flowers come, and when the leaves are in full play. Therefore, the best way is to trench the beds for bulbs in October, to put rotten dung at the bottom of the trenches, and after the bulbs are all in, to put stout pieces of the different *Mimulus* in the distances between the bulbs; the roots of the *Mimulus* creep near the surface, and they will never reach down to the dung. The whole may be removed in June, and if the bed is then trenched back again, all that remains of the rotten dung will come to the top, and be just the thing for starting the next crop.

The surface of a bed can never be too rich for a summer crop of any sort, for promoting a foot-hold at once; after that, it is better that the roots should *work freely* into ordinary soil without stimulus. Therefore nothing could be more favourable for *Mimulus*, for *Bulbs*, and for *Verbenas*, *Geraniums*, and the like, than this arrangement.

I do not at all hold with those who say that *Geranium* and such beds should not be dug deep; the deeper the better, as the very poorest soil will do for the bottom, unless the bed is on chalk or very open ground, and if it is, it must be of good soil throughout.

BEDDING GERANIUMS.

I am going to save all my old bedding *Geraniums* this winter on the dry system, for the first time in my practice. The very young *Tom Thumbs*, and all the fancy and variegated ones, I suppose must be kept in pots; but I shall cut them so close, both at the roots and overhead, that I shall cram four or five of them in a 48-pot, and in very good loam, with one-half sand in it. I shall keep them close to the glass till I see the little buds starting all over them; after that, they must be kept as cool as possible, and as dry as they can bear without hazarding their lives. Those stronger ones, which I mean to keep dry, will be in a very dry cellar; and yet it is not a regular cellar, only a four-feet deep space under the ground-floor of my cottage. There are air-bricks all round this space, and we find that things keep better there than in a regular cellar during the summer. It is as dry as a nut and as sweet as a cake, and I can close up the air-bricks when I choose. I shall cut off all the green parts made this summer, preserve all the roots, dry them well before I put them by for the season, and I shall plant the different kinds in little hampers, half-filled with very dry and very sandy soil, so that the plants will be as deep in the hampers as they were in the beds. If I had any fears about damp I would pack lots of carpenter's shavings among the plants, and all round them.

D. BEATON.

VINES IN POTS.

I HAVE hitherto been prevented alluding again to this subject, and just when thinking of doing so, I have received a letter from my friend, Mr. Fraser, part of which is devoted to that subject. What farther I have to say can well afford to wait a little longer; but the mode of fruiting the second season is so well explained, and so much in accordance with what my own practice used to be, and the deductions as to the purely economical part of the question are, in my opinion, so sound, that I am sure Mr. Fraser will excuse me for endeavouring to give that part of his letter a wider and useful publicity.

"Wilderness Park, September 16th, 1854.

"I was very much pleased with your remarks on growing Vines in pots, page 434, and for want of more interesting matter, I shall fill up a part of this letter with a short outline of the method I adopt in managing mine.

"About the 1st of January, I get well-ripened wood from healthy vines, selecting the finest, most prominent eyes, and cutting them off, so as to leave about one inch of wood on each side of the bud. A quantity of these eyes or buds are then placed in large pans or pots filled with light earth, pressed rather firm; the pieces being pressed gently on the soil, so as to leave the buds uppermost, and these then just slightly covered over. The pans are then plunged into a sweet bottom-heat of from 70° to 80°, until the buds begin to push roots, and make a growth of from one to two inches. They are then potted separately into large 60's, and plunged into bottom-heat, as before. As soon as they have filled their pots with roots they are again shifted into 32-pots, or a size larger, if the plants are strong. When the pots get filled again they receive a final shift into sixteen or eighteen-inch pots. They are then plunged in the front of a pit, with a good bottom-heat, and the shoots carefully trained on strings or wires, *about a foot from the glass, so as to expose every leaf to the sun*. All the lateral shoots are stopped at one joint from the main stem. The main shoot I stop when eight or nine feet long. During all this time the plants are carefully attended to with watering. About the middle of September, the pots are carefully lifted out of the pit, and the tops being as carefully handled, the pots are placed against a south wall, the shoots being tied or nailed securely against it, and a quantity of long dung is placed round the pots, alike to act as mulching, and to prevent the sun acting too fiercely upon them, its full force being reserved for the shoots against the wall. As soon as the wood of the shoots is ripe, they are pruned, and then the pots are moved to a dry shed, where they are plunged for the winter.

"As soon as they are wanted for forcing, as much of the surface soil is removed as is possible without injuring the roots, and a top-dressing of turfy loam and rotten cow-dung is given after the roots had been well moistened with tepid water. They are now placed in a pit in one of the Vineries, with a bottom-heat of from 70° to 80°, and more fermenting material is added, or a stirring takes place round the pots, as the heat declines; the shoots being subjected to the same gradual increase in temperature as other Vines. By such means, the roots get in advance of the tops, and I believe the grand secret of growing pot Vines, is to be able to give them a good amount of bottom-heat at all times, when thoroughly at work; at least, I have never seen great things done without it.

"From Vines treated as I have endeavoured to describe, I have had nine, ten, and eleven, tidy little bunches from each. The sorts I have grown are—*Black Hamburgh* and *White Sweet Water*. The soil I use is three-parts turfy loam, and one-part rotten cow-dung, and a little charcoal and sand. The charcoal I use chiefly as drainage. It will be perceived, I grow one season, and fruit early the next. I have tried plants, and seen others try them, the second season, but they seldom did well. Vines in pots are very interesting objects, and very pretty toys, but to say the best of them, all things considered, they are by no means profitable, even when very well managed. Had I an opportunity, I would advise every one having nothing but a greenhouse to have nothing to do with them, as they will, undoubtedly, be disappointed.

"The flower-beds have been very fine during the last two months. The bed planted with a mixture of *Shrubland Scarlet Geranium*, and *Ageratum*, which you noticed, has been much admired, but it certainly looks best at a distance.

"A. FRASER."

To save going over the same ground as to the young Vines, I may mention, that I frequently used to put each cutting or piece of wood with its separate bud, into a small pot at once, a small 60's, or large thumb. A

number of these were then plunged in tan, or other fermenting matter, in a large pot, and that again plunged in bottom-heat. I used to fancy, that in transferring the individual plants from pot to pot at the first shifting, there was less check given than when the young plants were potted separately from a pan in which many stood together. Perhaps this was merely a fancy, as when plunged at once in bottom-heat, and in a warm, moist atmosphere, very little check could occur. I used, also, to have one more intermediate shift, generally before placing the plant in the fruiting-pot; but, provided due care is taken in watering, I would prefer Mr. Fraser's method. The danger of a large shift is, that a careless waterer is apt to saturate and sour the soil before the action of the roots in it keeps it sweet and healthy. The uninitiated must keep in mind, that under such careful application of bottom-heat the roots will so progress, that, in either case, the top of the plant will be but small before it receives its destined fruiting-pot. Other things being equal, the sooner the plant gets into its fruiting-pot, the sooner will a strong, healthy plant be produced, and the sooner will the cane or shoot be perfectly matured. The maturing business is the chief thing *now* to be attended to, and if not already getting sufficiently browned to stand the full exposure of a south wall, there is still hope of getting a crop early next season. If heavy rains should fall during the rest of September, and during October, various means should be adopted for throwing it past the pot. A very simple mode, is to pile a cone of litter over the surface of the pot, with its base neatly extending beyond its rim. A small bit of wood on the south side will keep the cone in its place. The air and sun should exert as much influence on the wood and leaves as possible, with as little moisture as will just keep the foliage from being distressed or flagged.

R. FISH.

EARLY-FLOWERING BORDER PLANTS.

(Continued from Vol. XII., page 495.)

HELEBORUS—HELLEBORE.

From *helium*, to kill, and *bora*, food; some species are poisonous. In this genus is one of the earliest of our spring flowers, the Christmas Rose, as it is commonly called.

HELEBORUS ATRORUBENS (Dark-red).—From Hungary; flowering in March, and a purple colour; rising a foot high. Increased by division when the flowers have faded.

H. CUPREUS (Copper-coloured).—Flowers as early as January; growing nine inches high. Increased by division.

H. GRAVEOLENS (Strong-scented).—Flowers in February; has yellow flowers, growing a foot high.

H. LIVIDUS (Livid three-leaved).—Colour a dull, livid purple; grows a foot high, and flowers in March. There is, in gardens, a variety with the leaf-lobes entire, flowering in February.

H. NIGER (Black).—The Christmas Rose. From Austria; growing a foot high; has black roots, hence its name. The flowers are first pure white, then change to a pleasing pink; lasting a long time in flower. Increased by division. In severe weather, it is desirable to place a hand-light over the plants to preserve the flowers from dirt and wet. This plant may be gently forced, and really brought into flower in December. Take up the roots and divide them so as to get the divisions into six-inch pots, in strong, rich earth; do this in April, and plunge the pots in a cool, shady border. About the last week in November, bring a few of them into a gentle heat, and as soon as the flowers

appear remove them into the greenhouse, and they will bloom before the new year sets in, much finer than others in the open border, unless the latter are protected. They ornament the greenhouse at a time when there are few plants in flower. There is a variety called *angustifolius*, narrow-leaved, which is the only difference.

H. OLYMPICUS (Olympian).—From the mountains of India; perfectly hardy; flowering in February; colour of the bloom, green shaded with purple; growing a foot high.

H. ORIENTALIS (Eastern).—Also from India, and but lately introduced; flowers in February; colour dark chocolate; growing a foot high. Increased by seeds and division. A very desirable species.

H. PURPURESCENS (Purplish).—From Hungary; flowering in March; colour purple and green. Increased by division.

H. VERNALIS (Spring).—An Austrian species; with white flowers in March; growing six inches high; and increased by division and seeds.

The Hellebores will all grow in any garden soil enriched with well-decomposed manure, or leaf-mould. A rather shady border suits them best.

HELONIAS.

From *helos*, a marsh; plants loving a moist place. A genus of pretty plants all from North America. They thrive well in loamy, peaty soil, with the roots covered constantly with moss to keep them moist.

HELONIAS ANGUSTIFOLIUS (Narrow-leaved).—Flowers white, appearing in May, and growing a foot high. Increased by division just after the flowers have decayed.

H. BULLATA (Blistered).—Flowers yellowish-purple; appearing in April; growing a foot high. Increased by division.

H. ERYTHROSPERMA (Red-seeded).—Flowers white; blooming in May and June; growing six inches high. A very interesting plant. Increased by division and seeds, which should be sown as soon as ripe in a pot under a cold frame.

HEPATICA.

From *hepaticos*, the liver, leaves being lobed like it. This is a well-known genus of a very neat, pretty flower, requiring a light, rather sandy and peaty soil. They do not like often disturbing. Where they thrive well, they form large tufts, producing scores of flowers on each, and are then fine ornaments for the early border.

HEPATICA ACUTILOBA (Acute-lobed).—From North America; flowering in March; growing only four inches high; with blue flowers. Increased by division.

H. AMERICANA (American).—Blue flowers in March; growing four inches high. There are two varieties of this species which have white and pink flowers. This species may be easily distinguished from our common one, *triloba*, by its only having two-lobed leaves. Increased by division after the bloom is over, and by seeds as soon as they are ripe, in wide pans or boxes under a cold frame.

H. ANGULOSA (Angle-stommed).—From North America, with blue flowers in March, growing six inches high. Increased by division.

H. TRILOBA (Three-lobed).—Originally found wild in England, but now generally cultivated in gardens. The original species is pink-flowered, appearing in April and March. There are the following varieties:—Single Pink, Double Pink, Single Blue, Double Blue (this is the most rare), and Single White. The Double White has often been said to be in existence, but I never could meet with it, nor with any one that could positively say they had seen it.

I have potted these plants in five-inch pots, and brought them into the greenhouse in January, and have had them in flower a month earlier than those in the

borders. When done flowering, I placed them in a cold frame till May, and then plunged the pots in a border facing the east, and they have bloomed better the following year, and even for the two succeeding ones. After that time they should be turned out of the pots, and planted into the open border for two years to recover strength. Fresh roots should be taken up to succeed them. They were always greatly admired so treated.

HESPERIS—ROCKET.

From *Hesperos*, the evening star. The flowers scent the evening air.

H. APRICA (Exposed).—A rare species from Siberia. Flowers in May, growing only six inches high, with purple flowers. Increased by cuttings and division.

H. EXCELSA (Lofty).—From Siberia, growing two feet high, with white flowers in May. Increased by division.

H. MATRONALIS (Matronly).—The Dame's Flower. The Double White Rocket is well known, though the original variety is almost lost. Near large towns it is destroyed by the smoke. There is a Double White Rocket that was brought from France about twenty years ago, that is much hardier and more easily propagated, but it is not so dense a spike, nor so pure a white, as the English one, and, besides, that grows much taller and always branches, which detracts from its beauty, compared with the more dense spike of the original variety; the spike of which has been likened to the cockade that foot soldiers were in their caps. Cultivators that possess it would do a service to the lovers of beautiful white flowers if they would propagate it freely, and make it known that they have a stock to dispose of.

There is also the Double Purple Rocket; and three years ago Messrs. Henderson, of St. John's Wood, sent out one they called the Scarlet Rocket, which is a beautiful variety, with reddish-purple flowers. I saw all the four varieties in flower last May, in the garden of the Mayor of Macclesfield, John Smith, Esq. They were planted in beds sheltered by a low hedge, and made a splendid appearance; but I thought the best were the original white and the scarlet varieties. All may be increased by cuttings of the flower-stems, planted in sand, on a shady border, or by slips, when they make any close to the root, slipped off, and planted in a similar way and place.

H. REPANDA (Spread).—A distinct species, from Spain, growing two feet high, with pale purple flowers, in June. Increased by division.

H. SPECIOSA (Showy).—From the cold country of Siberia, growing six inches high, with rosy-purple flowers appearing in April. Introduced about twenty years ago, but is yet very rare in gardens, which is a pity, for it is a little gem in early spring. Increases slowly by dividing the roots as soon as the flower fades. A small stock should always be kept in a cold frame through our changeable winters. These changes destroy this and many other plants from much colder latitudes, where the winter is constant and unremitting in cold, frost, and snow.

T. APPLEY.

(To be continued.)

GREENHOUSE FERNS.

(Continued from Vol. XII., page 496.)

HYPOLEPIS.

A genus of Ferns separated from *Polypodium* and *Cheilanthes*, by Mr Bernhardt. Name derived from *hypo* under, and *lepis* a scale, the seeds being partly covered by a scale. The genus may be distinguished by that character, and by the situation of the seed-vessels which are placed in the hollow, or sinus of the leaf. There is only one species in the genus in cultivation that will thrive in the greenhouse.

H. RUGULOSA (Rather rough).—From Van Dieman's Land. Fronds two feet high, thrice cut; pinnæ lance-shaped; seed-vessels round and covered with a scale. Rootstock very rough, with scales much lengthened and creeping. Increased readily by division.

LITOBROCKIA.

This is a remarkable genus of these elegant plants, the Ferns allied to *Pteris*, from having the seed-vessels in a line close to the margin of the leaf; for the derivation, see Stove Ferns.

L. VESPERTILIONIS (Bat-winged).—A handsome, fast-growing, New Holland Fern, of a bright, lively green. Fronds two feet high, green on the upper surface, and grey underneath, and thrice cut, with the pinnæ of unequal lengths; seed-vessels marginal, long and narrow. Rhizoma creeps very fast, and by dividing it many plants may be made of an oldish plant.

LOMARIA.

This is a genus containing many species, and they are chiefly suitable for the greenhouse; and besides that, are generally of a moderate size, and easy to cultivate. The name is derived from *loma*, a border; from the position of the seed-vessels. Here, again, is an affinity with *Pteris*; the difference consists in the fertile frond being contracted, or turned up at the edges; this character distinguishes it also from *Blechnum*.

L. ALPINA (Alpine).—From New Holland, and nearly hardy. Fronds of two kinds; the fertile, or seed-bearing, grow six inches high; the barren only four inches; hence the fertile ones are very conspicuous; they are of a lively green, and both pinnated. It is a desirable species, and easily increased by dividing the rhizoma. I have grown this neat little Fern well in a Wardian case, and also in a cold frame.

L. ALTA (Tall).—Found plentifully in New Zealand. Barren fronds two feet high, pale green, and pinnated, or once cut, or divided; pinnæ heart-shaped, with short stems. Fertile fronds also pinnate, two feet high; pinnæ contracted, long and narrow. Stems covered with chaffy scales. Root-stock creeps slowly, hence it is slow to increase by division; but it may be raised from seeds, or spores.

L. ATTENUATA (Attenuated, or Thin).—A rather tender greenhouse species, from the Mauritius. It should have but little water in winter, or it will perish. Fronds of both kinds pinnated; fertile ones a foot high; barren ones six inches taller; both slender-growing, or attenuated. The rhizoma sometimes grows erect, and two feet high, with branches at the foot that creep. By this the species may be easily known. It is increased by cutting off one of the creeping rhizomas.

L. AURICULATA (Eared).—This is a remarkable Fern, from the Cape of Good Hope. I saw, this summer, three or four fine specimens in the Birmingham Botanic Gardens, placed behind a north wall, as a summer habitation. The fronds on them were, in some instances, nearly two feet long. I know that most of our hardest greenhouse Ferns would be much benefited if set out-of-doors, in a shady place, during the summer. Fronds of both kinds pinnate; the barren ones are lance-shaped, and of a pleasing green; the others broader at the base, with the pinnæ long, narrow, and terminating with a sharp point. Very slow of increase; the root-stock does not creep, but sometimes sends out a branch at the base, which, when rooted, may be taken off, potted, and placed under a hand-glass for a week or two, till it makes fresh roots and new fronds.

L. CAPENSIS (Cape of Good Hope).—Undoubtedly, this is the giant of the genus, growing three feet or more high. In fact, in some gardens, it is named *L. gigantea*. Sterile fronds, coarse and strong, dark-green, pinnated; pinnæ six inches long, wavy-edged,

and heart-shaped, with notched edges. Fertile fronds, pinnate; pinnæ long and narrow, and entire at the edges, though contracted. Stems scaly. Increased by dividing the thick, creeping root-stock; but the divisions must be well rooted, with a frond or two on each.

L. FRAZERI (Frazer's).—So named by A. Cunningham, in honour of his friend, A. Frazer, a fellow-traveller. Native of New Zealand, and a very handsome Fern. Fertile fronds twice cut; pinnæ narrow and oblong, growing a foot high; the others are shorter. Increased by dividing the creeping rhizoma.

L. GILLIESII (Gillies's).—Though from the Brazils, this handsome Fern is hardy enough to thrive in the greenhouse. Frond of both kinds pinnate. Barren fronds a foot high, of an oval lance-shape; pinnæ obliquely heart-shaped, that is, one side is shorter than the other, in the same way as some Begonias. The margin is cut. Fertile fronds a foot high; pinnæ narrow, contracted, and sharp-pointed. The rhizoma produces many heads; hence, the plant may be increased by division.

L. MAGELLANICA (Magellan).—So named, because it is a native of Terra del Fuego, a country on the borders of the Straits of Magellan. Fronds of both kinds pinnate. Sterile fronds a foot long, lance-shaped; pinnæ narrow, and sharp pointed, with the margin entire. Fertile fronds also a foot long, narrow, contracted, and sharp at the point. Fronds standing on the top of an erect rhizoma, which, Dr. Gardener says, he saw many specimens four feet high, at a great height on the Organ Mountains, in Brazil. It is very rare, and can only be increased by seed.

L. NUDA (Naked).—A Fern found in Van Dieman's Land. Fronds of both kinds pinnate. Sterile ones broadly lance-shaped, growing a foot-and-a-half high, and of a beautiful light green. Fertile fronds, with pinnæ of a sickle form, narrow, and sharp-pointed. Rhizoma many-headed, and rather creeping. Increased by division.

L. PATTERSONI (Patterson's).—Another species from Van Dieman's Land. Fronds simple, sometimes, when well grown, slightly pinnate. Barren fronds stiff or rigid, growing six or nine inches high, long, lance-shaped, with the edge notched. Fertile fronds a foot high, long, narrow, simple, but often pinnate. Increased by dividing the plant when it has many heads.

NIPHOBOLUS.

Whoever grows any species of this genus may be much gratified by a microscopic view of the under-side of the leaves. There will, when so viewed, be seen a white, starry set of short, fine hairs, giving the leaf (*niphobolus*) a mossy appearance.

N. LINGUA (Tongue-like).—A Chinese Fern, of a neat habit, but rarely seen in fruit. The only time I ever saw it was on the rockwork in the Fern House in the Botanic Garden at Sheffield. I imagine the reason has been because it has generally been kept too warm in the stove. Fronds simple and of two kinds. Barren fronds long, oval-shape, with a sharp point, growing nine inches high. Fertile fronds turned up at the edge a little, and rather less than the other seed-cases, thickly strewn on the under surface, giving the frond the appearance of a piece of brown cloth. Veins placed between the two surfaces of the leaf; these, to be seen in their wondrous beauty, should have the tissue of substance of the leaf destroyed and removed by soaking in water. If this be delicately done, one of the most beautiful examples of elegant veining will be seen. Increases fast by dividing its quickly-creeping rhizoma.

N. RUPESTRIS (Rock).—One of the tiniest of all Ferns. I have kept it in a three-inch pot for years. Native of Australia. Fronds of two kinds. Fertile, narrow, and blunt at the top, and not more than three inches high.

Barren ones, thick, oval, and not more than two inches high. This pretty little Fern might be grown in those tiny pots in which we see Sedums, and small Aloes, and Mesembryanthemums cultivated, and sold in Italian warehouses in London, generally termed baby plants. It might also be planted on a hollow stone, and hung up in a Wardian case. Increases freely by dividing the creeping rhizoma.

T. APPLEBY.

(To be continued.)

RIPENING OF LATE FRUITS.

As cold retards the progress of most natural productions, in like proportion that warmth hastens them on, it behoves us to use these two agents in such a way as to conduce most to our benefit, and for the general well-being of the things we have in hand. In the first place, we will suppose that certain late fruits of a perfectly hardy kind seem more inclined to decay than ripen; we must, in this case, use the warmth with a view to hasten on the proper maturing, and in this way a few good fruit of late *Melons*, which at this season are much inferior to what they are in August, may be much improved by having their latent juices corrected by a judicious application of heat, so as to hasten the production or formation of sugary matter in the fruit. Where it is impracticable to give this to the plant, the fruit will be somewhat benefited by being placed in a warm medium, the warmest end of a forcing-house, or stove, or, what is better, perhaps, a warm kitchen, or other heated place. It may appear strange that a fruit should attain a better flavour by such treatment after it has been separated from the plant; and we can only account for it by supposing, that in the warm, dry medium in which it is placed, some of the juices are converted to sugar and high flavour, by a process similar to that which gives sweetness and flavour to barley in converting it into malt. Certain it is, that a Melon will improve by such treatment; but to say that it will be as good as one produced in August, would be affirming an untruth; for in spite of all the means which fire and water enable us to command, the genial influence of the sun at Midsummer far outstrips it all in the perfecting of fruit and other natural objects, and whatever ripens then, or afterwards, is better than the same things are at a later period, providing that this early season be their natural one for so doing.

Next to late Melons benefiting by artificial heat, certain kinds of *Pears* require it also; otherwise they are not of any use. Of this fruit it would be difficult to particularize, because some seasons seem to exercise an influence over it which other seasons do not. For instance, in some years, *Crassane* Pears will all become cracked and useless, with scarce a good one to be found, while, in another season, they will be sound and good. Some kinds, too, have a tendency to decay on one side, long before the principal portion of the fruit be ripe or even full grown; and though in a wall-tree the evil may be supposed to be partly controllable by the cultivator, yet I am more in favour of open standard trees than those trained on walls, where the climate and other features will allow the former to grow, because I think the flavour so much superior. Let any one dubious of this fact taste a *Marie Louise* Pear grown on a wall, and one of the same kind from an open standard, and I have no doubt but he will easily pronounce in favour of the latter; and in other kinds the superiority is equally perceptible, whenever they attain any thing like a matured condition, for, of course, when this cannot be accomplished in the standard, there is some advantage in the "wall tree," if it have any other aspect but north, and other things favour its growth and perfection.

It is certainly a pity that we have no Pears for late winter use which can at all compare with those in season now. Our *William's Boncretien* and *Marie Louise*, would so far outstrip the late ones in merit, were they, by some act of conjuring, or other contrivance, saved through the winter in all their melting sugariness, that we would be dissatisfied with the kinds we have in use then; and I know there are many growers who would place some other of their early autumn favourites before the two I have named; whichever it is, certain they all agree, that as the season advances, the Pear whose turn it comes to to serve at the table, gradually falls off, and shows less, and less merit, until the latest of all, when in its best possible order, would have a poor chance of competing with a *Jargonelle* Pear in August, could they by any means be both brought together at the same time; but, as it seems impossible to make the late one as delicious as the earlier variety, still, a judicious treatment will make it much better than it often is, and that treatment is what I have recommended for the Melon, &c., as above, coupled with some other treatment, which I will here point out.

In late seasons, and late situations, I believe I am right in saying that no treatment whatever will make very late kinds of Pears really good; for they do not arrive at that maturity necessary to their ever attaining a good flavour; consequently, some of those not so very late must be made to serve their places, and must be kept as well as they can be, in order to prolong the season. In that way the *Winter Neilis*, not by any means a very late Pear, will, nevertheless, last much longer in some places than it does in others, and in some seasons it will do so longer than in others also. The reason is obvious: certain years it is as far advanced towards perfection by the first of October as in other seasons it is by the first of November; and we need hardly tell our readers that this is telling much more than a month, because its progress in October would be much more than in November, all the agents which assist it being in much greater activity in the earlier month than the later one—hence the difference; and it is by taking advantage of this, that we are able to retard or perfect the variety of fruit we have in view, as the case may be; or rather, it is owing to that cause, whereby fruits of certain kinds come on quicker or slower in some years than in others, from causes purely natural, and over which we have no control whatever—a fine autumn, like the present one, perfecting them earlier than usual; while a dull, wet one, like that of 1852, has a contrary effect.

While mentioning the early and late ripening of the same kinds of Pears in different seasons, it calls to my recollection the care of a *Late Admirable Peach*, which I had many years ago, but in another place, yet equally favoured as to latitude, &c. This Peach usually ripened in October, in tolerably good order; but I remember one season, in which I was not able to save a single fruit to the first of that month, while, on another occasion, I have had good fruit up to the first of December, and one or two solitary ones up to the 20th of that month, nearly to Christmas, but this was the very latest, while the case recorded above was the earliest; now, in these two extremes, there is a space of nearly three months, and that, too, in the Peach, which is a fruit by no means calculated for lengthened servitude; but I record it here, as showing the difference which certain seasons make in fruits, when the same attention is paid them in the shape of culture, &c., which, I need hardly say, was the same in the two cases of early and late Peach-ripening recorded above.

It is easy to multiply instances like the foregoing; but enough has been said to satisfy the amateur whose late autumn Pears are this season coming on as early ones; but I would, nevertheless, strongly advise some

of them being laid in the coolest place that can be had; only, be it observed, a retarded fruit loses flavour in like manner as a hastened one never gains it; so that if there be a sufficient succession of fruit to carry on the supply, without an intermission, throughout the season, I would rather advise the kinds which would come naturally on in rotation, to be allowed to do so, as they will, in most instances, be better than either the forced or retarded ones, other things being the same; so that when necessity does not require either the one or the other to be put in practice, they might both be dispensed with.

J. ROBSON.

THE MISTAKE.

By the Authoress of "*My Flowers*."

(Continued from Vol. XII., page 500.)

THE letters written by John Henry, at this time, to his kind and interested friends, continued to be of the most satisfactory kind. Strong and unmistakeable evidence of the "divine life" were shown forth in them, "shining brighter and brighter unto the perfect day." In one of them, he, with simple, yet heaven-taught, truth, thus writes: "We have a beautiful picture of a Christian's life set forth in the 'Pilgrim's Progress.' Christian first leaves the City of Destruction; he sets his affections upon things above, and not on things beneath; nor is he ashamed to tell any one that he has left the City of Destruction, and is travelling to another, like Abraham, to a heavenly one. Christian had many difficulties in his journey, and so with all Christians. It is through tribulation we must enter the kingdom of heaven. 'If the righteous scarcely be saved, where shall the ungodly and sinner appear?' When we consider how a man is saved, it is wonderful; it is of the tender mercies of God that any is saved; 'We are as brands plucked from the burning.'"

There are those among us who think there is no need of repentance; there are others who think they can repent when they please. Let such ponder a moment upon John Henry's words. "When we consider how a man is saved, it is wonderful." Is there anything unnecessary, or easy, then, in being saved? It is a wonderful work of God, and not of man—we are as "brands *snatched* from the burning." We cannot snatch ourselves, we must be *snatched*. We are burning now; the wrath of God is kindled, and the flames are rising higher and higher around us. We must be, dear readers, we must, indeed, be, if we are saved at all, "brands *snatched* from the burning." Another fragment of a letter calls upon his beloved pastor to labour for dead souls:—"Be strong in the Lord, and of good courage. It is a sorrowful thing to be speaking or preaching to dry and dead bones. But when the Lord puts His breath or Spirit into them, and they begin to move and live, then, and not till then, is your rejoicement. If these bones still remain dead, be not weary in well doing; still speak to them, and pray for them, that they may live. May God still enable you to speak a word in season, and may His Holy Spirit apply the word of His servant, or servants, to the hearts of men for Jesus Christ's sake."

In the year 1849, four years from the time of his conversion to God, John Henry prepared to seek another *earthly* country. He prepared to go out as an emigrant among the crowds who began about that time to depart from their father-land. Mr. Johnston says, "He had for some time attended the week-day school of the parish, with the view of qualifying himself to act as schoolmaster, but from the want of early training he made but little progress; so that, after a short time, he abandoned the idea altogether, and began seriously to think of applying for a passage to Australia with the other emigrants from his own neighbourhood."

It seems to me that Christians rarely act up to their privileges. There is a "going down to Egypt for help" in many things where the arm of God would soon bring deliverance, if it was only looked to, and rested on. Many Christians have faith to believe unto salvation, and yet have not faith to wait simply upon the Lord in daily concerns.

They possess promissory notes of inestimable value, securing to them *everything* they can possibly need or desire, and yet they go fasting, and trembling, and stumbling, because they dare not, or will not, believe that they may use them. One of these "little ones" was poor John Henry, in spite of his knowledge and growth in holiness. He had sought and found "the kingdom of God and his righteousness," but he could not, as it would seem, trust to the promise that "all these things," that is, food, and clothing, and worldly necessities, "shall be added unto" us. Strange, that when we have received the greatest things, we should be of "doubtful mind" concerning the lesser things. What a view this gives us of the depravity of the human heart, even when it is renewed by divine grace.

Poor John Henry resolved to abandon his native land, and seek a living in a distant country. That, indeed, was but a small thing; he abandoned religious privileges, means of grace, and the fellowship of God's people. Alas! was not this acting in direct opposition to the revealed will of God? When we give up spiritual good for worldly good, is it not labouring for the meat that perisheth, and despising that which endureth unto eternal life? By voluntarily leaving religious advantages, and settling ourselves where they are not to be had, we place ourselves at once in the kingdom of Satan, in the way of sinners, and out of the reach of those benefits which a God of love has provided for our refreshment in the troublesome and dangerous journey of life. Is not this, dear readers, tempting, as well as distrusting, the Lord?

Poor young man! In a letter or two to his beloved pastor, just before he sailed, the following touching passages occur: "I hope the Lord will be with me, and give me a grateful heart. And, as you have said, I might be useful to those in the ship with me, if I would but read a chapter. I pray God that He may increase my desire to do so, and give me that hungering and thirsting after righteousness which our gracious Master speaks of in St. Matthew." "If ever you find any burdened with sin, inquiring if they might be saved, though their hearts were hard, tell them that they can—that 'the blood of Jesus Christ cleanseth from all sin.' That as Moses lifted up the serpent in the wilderness even so must the Son of Man be lifted up, that whosoever believeth on him should not perish, but have everlasting life." I think you remember the time you pointed out those texts to me, with many others; at least, I remember them as clear as if they were pointed out yesterday. I thank God, through your instrumentality, for the peace I then found. Oh, may many find peace under your ministry!" "I hope the Lord will be with us upon the mighty sea, as it is *He* alone who can bring us safe to our journey's end. I am not yet certain whether there will be many praying people with us or not, as our time together is so short."

To his brother he writes: "We have great reason to bless God for his 'goodness and mercy, which endureth for ever.' Oh! let us, my dear brother, look to God, who is a present help in time of trouble. There are many places troubled with diseases, and sundry kinds of death. [Alluding to the visitation of cholera in 1849.] The reason why we are visited with these diseases is, because we have sinned and rebelled against Him. [Dear readers, lay this closely to your hearts.] Oh, let us confess our sins, and forsake them, and we shall find peace and comfort in believing. Let us pray for each other, and also for the children of men." "My dear brother, how thankful should we be for the talents committed to us, and we should seek to improve them, yea, we should ask grace to improve them. I regret I have not improved in spiritual things as I ought, but I pray God to assist me in time to come. I have, for my own part, resolved to be more earnest for the time to come." And yet he was going to fix himself in a land of spiritual drought, and famine, and desolation. He was at this very moment embarking to quit the courts of the Lord's house, and the place where His honour dwelleth, to go to a land where the "sound of the church-going bell" would never be heard, and the message from the Lord to sinners never be proclaimed. Oh, what need there is for daily and hourly crying, "Lord, show me *myself*!" If we would but *cast our care on the Lord*, He would provide all things needful for us. We have a plain and special command to guide and strengthen us: "Trust in the Lord and do good, so shalt

thou dwell in the land, and verily thou shalt be fed." Dear readers! let us *all walk according to the precept*, and BELIEVE ACCORDING TO THE PROMISE.

(To be continued.)

EARLY AND LATE-FLOWERING HARDY BORDER PLANTS.

MUCH has of late been said about early-flowering plants; and for late-flowering kinds we have a wide field to select from, such as Phloxes, the greater portion of this lovely family being late-flowerers. The Helianthus or Sunflower, several kinds. Liatris, Rudbeckias, Anemones, Coreopsis, Achilleas, Golden Rods, and Michaelmas Daisies. Many of the two last-mentioned families are extremely beautiful. Campanulas, Monardas, Pyrethrums, Cyclamens, Veronicas, Chrysocomas, and Staticee. Now, the *Statice tatarica*, and *S. latifolia*, are two very noble plants, and form most beautiful-embowered heads of flowers. To do them justice as ornamental plants, they should be planted out as single bunch plants upon the lawn, or some similar place. To the above may be added Dracocephalums, Colchicums, and Crucianellas.

The following is a list of some of the most ornamental species and varieties in the genera above-mentioned, according to their height, season of flowering, and the colour of the flowers.

Name.	Colour.	Date.	Feet.
Aster cyanus <i>alias</i> spurius	beautiful blue	Sept. to Nov. 3	to 4
" novæ angliae	purple	do. 4	to 6
" " rubra	red	do.	do.
" novi Belgii	blue	do. 4	to 5
" lanceolatus	white	do. 3½	to 4
" salicifolius	flesh-coloured	do. 4	to 5
" multiflorus	white	do. 3	to 3½
" grandiflorus	pale purple	Oct. to Nov. 2½	
" amellus	do.	Sept. to Nov. 2	
" Sibericus	do.	do. 2	
" emineus	do.	do. 2½	
" scrotinus	pale blue	do. 3	
" elegans	do.	Sept. to Oct. 2½	
" laevigatus	flesh-coloured	Sept. to Nov. 2	
" hyssopifolius	white	Sept. to Oct. 1	
" linarifolius.	pale blue	do. 1	
Anemone japonica	red	Aug. to Nov. 1½	to 2
var.			
Helianthus multiflorus	yellow	Aug. to Oct. 2½	to 4
" var. multiflorus pleno	do.	do.	do.
" angustifolius	do.	do.	do.
" diffusus	do.	do.	do.
Achillea Eupatorium	yellow	Aug. to Nov. 2½	to 3
" ptarmica pleno	white	Aug. to Oct. 1½	to 2
Rudbeckia hirta	yellow	Aug. & Sept. 1½	to 2
" purpurea	reddish-purple	do.	do.
" columnaris	yellow	do.	do.
" pulcherrima	reddish-yellow	do.	do.
Dracocephalum virginianum	light purple	do.	3
" speciosum	light pink	do.	4
" denticulatum	pale purple	August.	3
Chrysocoma linosyris	yellow	Sept. to Nov. 2	
" draunculoides	do.	do.	do.
Chelone glabra	white	Aug. & Sept. 2	
" obliqua	red	do.	do.
" barbata	scarlet	do. 3	
Monarda didyma	do.	July to Sept. 1½	
" fistulosa	reddish-purple	do. 2	
" altissima	lilac	do. 2½	
Coreopsis lanceolata	yellow	do. 3	
" verticillata	do.	do.	do.
" aurea	do.	do.	do.
Liatris spicata	purple	Aug. to Oct. 3	to 4
" squarosa	do.	July & Aug. 3	
Pyrethrum parthenium plenum	white	July to Nov. 1	to 2
" uliginosum	do.	Aug. to Nov. 3	to 4

Name.	Colour.	Date.	Feet.
Veronica Sibirica	do.	July & Aug.	3
" Virginica	do.	do.	4 to 5
" longifolia	purple	Aug. & Sept.	3
" incana	deep purple	July to Sept.	2
" laciniata	light purple	do.	2
Solidago Canadensis	yellow	Aug. & Sept.	2
" fragrans	do.	do.	3
" aspera	do.	September.	3
" rugosa	do.	Aug. & Sept.	3
" cæsia	do.	do.	2
" Cambrica	do.	do.	9 inches.
" rigida	do.	do.	3 ft.
Phlox cordata	purple	do.	3
" cordata rosea	rosy-purple	July to Sept.	3
" cordata grandiflora	purple	do.	3
" rubrum	purple	do.	3
" speciosissima	white	do.	3
" acuminata	reddish-purple	do.	3 to 4
" molinensis	streaky-white	do.	3 to 4
" Roersii	purplish-red	do.	3
" Wheelerii	do.	do.	3
" corymbosa	purple	do.	3
" hydrangiformis	purplish-red	do.	3
" scabra	lilac	do.	3 to 4
" odorata	do.	do.	2 to 3
" latifolia	purple	do.	2 to 3
" excelsa	light purple	Aug. & Sept.	4
" paniculata	pinkish-purple	do.	4
" paniculata alba	white	do.	4
" longiflora elegans	lightish-red	July to Sept.	2 to 3
" tardiflora	white	Aug. & Sept.	2
" Blandina	pale purple	do.	1 to 2
" nitida	do.	do.	1 to 2
" omuiflora	white	do.	1½
" Salterii	reddish-pink	do.	3
" Gaiteii	white	do.	3½
Campanula glomerata			2
var. autumnalis	deep purple	do.	2 to 3
Lobelia syphilitica	purple	do.	2 to 3
" syphilitica	white	do.	2 to 3
Cyclamen Europeum,	red and lilac	Aug. to Nov.	
also the white variety.			
Colchicum autumnale,	pale purple	September.	
and all its varieties			
Statice latifolia	light purple	July to Oct.	2
" tatarica	purple	do.	2
Crucianella stilosa	pale red	do.	1 to 2
Pentstemon gentianaoides	red	do.	2
" coccinea	scarlet	do.	2
" gigantea	do.	do.	2
" Mackayana	light red	do.	1½
" campanulata	in great variety	do.	1½

A few plants of each kind of the above-mentioned list of late-flowering plants would do much towards ornamenting the garden of our correspondent, "A Floriculturist."

Our next list will be of Annuals, to meet the wishes of the above correspondent.—T. W.

SUABIAN PIGEON.

Your correspondent, "Bury Boy," at page 487 of your number for September 19, inquires about a variety of Pigeon, which I suspect is the Suabian Pigeon, or, as they called in Germany, "Schwabens," or, still more probably, they are a cross of that variety, which I believe is the origin of all those spangled Toys, known in England by the various names of Porcelains, Hyacinths, Ermines, Saxons, &c. The true Schwab, or Suabian Pigeon, is about the size of a Nun, and of the same shape and make, with a dove-house-pigeon's beak and expression, a turned crown, a gravel eye, and clean feet. It is truly a toy Pigeon; its only property being in its beautiful spangled feather. The ground-colour is that of a dark chequered, or dappled dove-house Pigeon, inclining to a glossy black; the feathers on the head and neck are all tipped with a creamy white, and across the lower part of the

breast it assumes an orange-brown shade; the tail is dark blue, with a black bar; the flight-feathers are dark, with a small white spot at the extremity of each; the secondary wing-feathers, and the primary covert-feathers of the same have a large, creamy-white spot on their outer web, and the smaller covert-feathers of the wings have the same spot on both sides, so that when the wing is closed it appears to be nearly all of a creamy-white, or a very soft stoue-colour, regularly marked with small, angular spots of the ground-colour; the epaulet, or scapular-feathers, have the same creamy-white spangles, largely-developed, on each side of the feather-shafts. The young have the same spangled feathers; but their first, or nest feathers, are of a reddish-brown, ("kite," or "brindled") colour; but gain the creamy-white shade at their moult. I obtained mine at Coblenz, on the Rhine, and I believe I was the first to bring them to England, in 1843. They are also known in France. There was a pair of them exhibited at the Winter Surrey Zoological Poultry Show, December, 1853, by Mr. Matthew Wicken, Regent's Park, in pen Z, under the name of "White-winged West Indians." They were identical with mine, some of which, when I parted with them, I believe, went to London, and it is probable that those shown might be descended from them. Their most correct name would be Suabian Spangled Pigeons.—B. P. BRENT.

ZEPHYRANTHES, OR FLOWER OF THE WEST WIND.

"If the gales coming from the west were always to embody such beauties as the pretty varieties belonging to this genus, I would, for one, wish that all the wind came from that quarter," was the thought which first crossed my mind after gathering the two varieties, *Candidus* and *Carinatus*, which I have had in bloom for the last two or three weeks, and comparing them with the descriptions given of them in the "Hortus Britannicus," and Mrs. Loudon's "Book of Bulbs." But upon second thought, I recollected that that was the quarter whence nearly all the rain comes, and that with much more west wind, we should, in all probability, have much more rain. And that second thought made me recollect, "That all these things had been more wisely arranged and ordained for man's advantage than I could wish them to be." I did not mean to enter upon a dissertation as to the wisdom of Providence here, but to describe.

ZEPHYRANTHES CANDIDUS, which is a pretty white flowering variety with semi-cylindrical grass-like looking leaves of a pretty green colour. It seems to me to be perfectly hardy, as I have never known it to suffer beyond having the extremities of its leaves burnt by extremes of either heat or cold. It thrives best in light sandy loam, and the bulbs increase in great abundance. The bed I have now in bloom has not been transplanted for the last three years; it is a mass, a beautiful mass of silvery-white flowers, crocus-like, with elongated stems. Well might the river La Plata have been so named in acknowledgment of the beautiful silvery appearance of its banks, if they are as beautifully studded with clumps of the beautiful flowers I have in bloom in this bed, as they are described to be. And

ZEPHYRANTHES CARINATUS.—O, you lovely flower! You Belladonian tinted beauty! You pretty little thing! What shall I say respecting you to those who love flowers? To tell them you have awakened a sentiment in my mind, which the coolness and selfish callousness of the world has almost destroyed in humanity, would not be saying much. Bah! they would say: You are as sentimental as a woman; and I might answer, "Some women." But no; putting them in the way of enjoying the same gratification will be much more to my purpose. Well! I think this pretty variety is also of very easy culture; I nursed it to disadvantage for some years, and last spring, about the commencement of April, I turned out what I had (some 100 to 150 roots) from the pots and pans in which they had been wintered, into a bed of light, sandy loam, sloping to the westward, and have had the satisfaction of having a beautiful bloom of them for the last two months; they have not flowered in a mass like *Candidus*, but have thrown up a continual supply of their pretty rose-coloured flowers. I purpose

taking them up in the autumn and placing them carefully, with uninjured roots (if possible), in pans; as I found, during the whole of last winter, that their vegetative powers were awake, and the leaves and roots remained plump and fresh, although their extension was not great. I will do this more from caution than necessity, as I am inclined to think they would prove hardy also. I find Mr. Beaton's suggestion, "that very many of these bulbous-rooted plants require to be kept in a state of growth during the winter months," to be not only scientific, but very easily and advantageously carried out without any great amount of care. The cultivation of bulbs is much neglected on account of people's impatience; they want something that will be in bloom "to-morrow," to serve some particular purpose, and to last in bloom until they are tired of looking at it. It is, certainly, the work of time to grow some of the species to a good size, and bloom them to perfection, when you know how to do it; but then, you are amply repaid for your trouble when the event arrives; and, as patience is a cure for so many evils, I cannot help advocating the practice of it, recommending it by experience.

If I knew where to obtain some of the other varieties of this genus, I should like to get them, as I fancy the whole of them are worthy of cultivation; at least, I am led to suppose so by the evidence produced by the two varieties above-mentioned.—C. B. S., *Jersey*.

WASP'S NESTS

MINE being a fruit county is the land of wasps; their nests, as recently asserted by several members of the Microscopical Societies, are not, I think, universally formed of fungoid matter; and I can confirm Mr. Walkey's and Mr. W. F. Smith's opinion, that such nests are formed from the gnawings, by the wasps, of dried nettle stalks and of wooden boxes, and the like: for I have for many years observed wasps industriously gnawing off the old and decayed paint from window-shutters, and doors, and old posts, and I think many persons, as well as myself, must have seen them at similar work, and it is fair to presume that the manufacture of nests was their only object, as it is not to be supposed that such material could form suitable food.—A WORCESTERSHIRE MAN.

SOIL FOR COMMON FERNS— TRANSPLANTING HONESTY.

SIX or seven years ago, I sowed a quantity of this in a bed in my kitchen-garden, and had it transplanted into a bare quick hedge bank, in which there was little or no sand, being a stiff loam. The plants were from a foot to fifteen inches high when they were moved, being rather drawn, and a few failed from drought, in other respects they did well.

The above may be useful to your correspondent "H. L."

While I am on the subject of transplanting, allow me to correct another mistake which I met with some time since, either in *THE COTTAGE GARDENER*, or *The Cottage Gardener's Dictionary*. It was there stated that *Honesty*, (*Lunaria Biennis*), would not transplant. Now, although I *knew* this was wrong, yet I determined to make assurance doubly sure, and transplanted some of last year's seedlings indifferently, one, two, and three times without occasioning any failure.—A. COPLAND, *Chelmsford*.

REMONSTRANCE FROM THE MALVERN BRAHMA POOTRAS.

MR. COTTAGE GARDENER.—Sir,—Myself, and my brothers and sisters, indeed, all my relations, are very much offended with you, for slighting us as you have done. In your report of the Malvern meeting you do not even name us; you certainly place No. 333 as having taken a prize, but who, amongst our numerous friends and admirers (and who are also admirers of yourself, Mr. Editor), had they not had a catalogue, would know that number represented our family;

and when no less than fourteen of my brothers and cousins took the trouble to take each of them two sisters with them, for the approbation of the Malvernites, and other visitors, I think it hard to be thus neglected, particularly when I, myself, heard more than one, who struck me as having a knowing face, pronounce us the most striking of the different groups. I have been often amused by reading opinions that we were not a pure race. Now, Mr. Editor, there, no doubt, are exceptions. As to our own immediate family, I can only say we are very particular, and can trace our pedigree for some generations, and I can assure you, that none of us have contracted marriages, either with the families of the Malays or Dorkings, as some parties who wish to have everything according to their "hobbie," have tried to make out. Hoping, Mr. Editor, you will say a good word for me and my relatives, who are thus maligned, I am, your well-wisher.—DOLLY BRAHMA POOTRA.

[The Editor of *THE COTTAGE GARDENER* assures "Dolly Brahma Pootra," that the omission was totally unintentional, and he begs that this assurance may be conveyed to every biped, feathered or unfeathered, who has been chagrined by the seeming slight. At the same time, he cannot but feel that no really respectable cock or hen would assume an oriental title to which their fowlhood has no pretensions; and he cannot refrain from saying, the whole family would take quite as good a position in poultry society, if they were announced as "Mr. and Mrs. Grey Shanghai," and the Masters and Misses Grey Shanghai." The Editor is very glad to hear that his correspondent has the pure blood of the Greys in her veins, but he advises her, to avoid disputes hereafter, to procure a certificate from Rouge Chanticleer, the Poultry Herald, that there is no bar-sinister to be added to her shield.]

ROSE CULTURE.

MR. FISH, in his remarks on the Northampton Horticultural Show, in July last, which appeared in your Journal, mentioned in highly flattering terms some Roses which I exhibited there, and concluded by expressing a wish that I would make known my system of cultivating them. I fear that I have nothing new to communicate to your readers on the subject. My Roses are chiefly "Standards," worked on the "Dog Rose stock." In planting them, I always take care that there is sufficient drainage under each Rose, which may easily be effected by placing broken bricks or stones at the bottom over the hole before planting the Rose. Mine are planted in loamy soil. No flower is more grateful for a liberal supply of manure, which may be applied in a liquid state, or as a top-dressing, and forked into the soil. I have used liquid-manure unsparingly this season, and have bestowed constant attention upon the plants, which, in my opinion, is the most important part in their culture. I, also, have them well mulched all through the winter.

The *Perpetuals*, *Teas*, and *Bourbons*, are now covered with blooms, some of them as fine as those in July. *Viscountesse des Cazes* has blossomed three times this year. I need hardly add, that Roses should never be planted in close situations, such as surrounded by shrubs; they should be exposed to a free current of air. A due regard to this, with plenty of manure, and constant attention, are the means which I have employed in their cultivation.

May I be allowed to say one word respecting the manner in which they are shown at Northampton?

According to the rules, they are to be exhibited in bunches of three flowers of each variety. The beauty of the Rose cannot be appreciated when three flowers are huddled together, as at Northampton. Why not show them in single blooms, as at Chiswick, and at the Regent's Park? The real beauty of the flower can then be seen, and its merits decided on.—T. B. MAUNSELL, *Thorpe Malsor, Northamptonshire*.

INFLUENCE OF PARENTS ON THE CHICKENS.

IN the course of some experiments on cross-breeding fowls, a Cuckoo Dorking hen was this year set on her own

eggs, fecundated by a Buff Shanghae cock. Nine chicken were hatched, five of which are of a light grey "Brahma Pootra" character, the remainder being various shades of buff and cinnamon. Curiously enough, the five former are all cockerels, and the latter all pullets, exactly reversing the parents' colours. In another similar younger brood, the relative colours and sexes appear to be identical with the above, but as yet they are hardly of sufficient age to speak as positively as could be wished on so curious an occurrence. It is generally admitted, that pullets partake more of the sire's character, and cockerels of that of the mother, but we have no recollection of an instance in our own yard where so striking a confirmation of the common rule was observable. It might serve a good purpose, therefore, if any similar result that has fallen within the knowledge of others were recorded. We should add, that the cockerels were magnificently framed after the model of their Dorking mother, while the pullets deviated but little from the usual Shanghae proportions.—W.

COVENT GARDEN.—OCTOBER 2ND.

Trade very quiet, and the prices steady.

FRUIT.

Pine Apples, 2s 6d to 4s p. lb.	Filberts, 9s per doz. lbs.
Grapes, Hamburgh, 2s 6d to 6s per lb.	Damsons, 4s 6d per half sieve
Wall Grapes, 9s per doz. lbs.	Walnuts, 6s to 8s per peck
Figs, 2s per punnet	Lemons, 22s per hundred
October Peaches, 3s to 8s per dozen	Almonds, 24s per bushel
Dessert Apples, 7s per bushel	Brazilian Nuts, 5s 6d per pk.
Apples, Kitchen, 5s per bush.	Barcelonas, 5s per peck
	Cob Nuts, 3s per peck
	Pears, 4s to 8s per bushel

VEGETABLES.

Greens, 1s 9d per doz. bunchs.	Leeks, 1s 6d per doz. bunch.
Brocoli, 4s per doz. bunches	Vegetable Marrow, 8d p. doz.
Turnips, 1s 6d to 2s per dozen bunches	Beet, 4d to 6d per bunch
Carrots, 4s per doz. bunches	Chillies, 1s 6d per hundred
Lettuces, 1s per score	Mushrooms, 1s per pottle
Endive, 9d to 1s per score	Cabbages, 8d per dozen
Cauliflower, 1s to 3s per doz.	Red Cabbages, 1s 6d per doz.
Artichokes, 3s 6d to 5s p. doz.	Radishes, 1s per doz. bunch.
Onions, 3s 6d per bushel	Celery, 1s to 1s 6d per bunch
Water Cresses, 4d to 6d per doz. bunches	Scarlet Runners, 5s per sieve
Brussels Sprouts, 1s 6d per half sieve	Kidney Beans, 4s per half s.
Tomatoes, 4s per half sieve	Peas, 3s 6d per bushel
Gerkins, 2s per hundred	Garlic and Shallots, 8d p. lb.
	Spanish Radishes, 4d p. bunch.
	Cucumbers, 1s to 3s per doz.
	Potatoes, 5s per cwt.

HERBS.

Parsley, Sage, Basil, Thyme, Mint, Burnet, from 1d to 4d per bunch.

CUT FLOWERS.—Dahlias, Verbenas, China Asters, Roses, Pansies, Mignonette, Fuchsias, and Asters, from 2d to 1s per bunch. Violets, 1s per dozen bunches. Bouquets, from 1s to 2s 6d each.

QUERIES AND ANSWERS.

GARDENING.

VARIOUS CAPE PLANTS.

"AN OLD SUBSCRIBER, at Clapton, will be greatly obliged by being informed how to grow the following Cape Plants, which have just been imported in excellent condition":—

[1. *ALOE MARGARITIFERA*.—This we presume to be synonymous with *Haworthia granata*, or *Haworthia brevis*, or it may be *Haworthia Margaritifera*. The last-named is considerably stronger than the others, though it is generally a small, grotesque-looking plant. The first-named seldom

risers above a few inches in height. These plants are exceedingly interesting for the proprietors of a small greenhouse, where a heat of from 40° to 50° can be maintained in winter; and though a few plants make but little appearance, a good number of them have a pleasing effect, whether growing or in bloom. The treatment for the whole of the allied genera is much the same. Propagation is generally effected by suckers; and many multiply readily that make thick leaves, by cutting these leaves in pieces; allowing the cut parts to dry thoroughly, in a shady place, and then placing them rather loosely in gravelly and lime rubbishy soil, and keeping them in a warm part of the greenhouse, or in a mild, dryish hotbed. The soil most suitable is a mixture of peat and loam, with nearly an equal portion of charcoal, broken bricks, or lime rubbish, with the usual manure-water, or top-dressings of old cow-dung, when the plant is growing freely. Drainage must be particularly attended to; for if ever the soil is long saturated, the plant will become sickly, and damp or rot off. The flowers have a singular greyish appearance, and generally come about midsummer. The chief thing is to grow and bloom them in summer, and to give them comparative rest and dryness in winter. The plant being newly introduced, must not be kept so very dry the first winter, and a warmish place in the plant-stove may also be allotted to it; but though the plant must not be dry, it must not long be wet. The treatment recommended for *Cactus* will suit this tribe in the main points. When fully established, the plant will imbibe a fair portion of moisture during summer, and rejoice in a temperature of from 60° to 85°. Water must be lessened in autumn, and none given in winter, unless the plant is near a heating apparatus, or it shows any tendency to shrivel. After the first winter it will thrive in a temperature, during the winter months, of from 40° to 50°.

2. *STRELITZIA REGINÆ*.—A fine old plant, now seldom met with, named in commemoration of the Queen of George the Third. The flowers, like most of the *Musad* group, have a very singular appearance. I have had it very good as a pot-plant in a stove. It was grown in two parts fibry loam and one of peat, with a fair portion of good drainage, and some dried nodules of dung to keep the whole open. The plants were well watered during summer, and allowed to luxuriate in a moist atmosphere and a temperature from 60° to 85°. As winter approached, the water was curtailed,—enough given in the dark months to keep the plants healthy, and no more; a temperature from 55° to 60°; and then the increase of water and heat, as the sun and its light acquired strength, brought strong flower spathes in sight, in spring and early summer. The system altered would cause the bloom to come at other times; but the best plants that I ever saw were plunged in a bark-bed, the same as Pines; and perhaps the very best were planted out, and fresh heat supplied around them every spring. I have heard of them thriving in a warm greenhouse, but I never saw them fully at home, unless in a tropical temperature. The plants are propagated by division and suckers, and also by seed, which should be sown in a hotbed, or plant them as soon as ripe. White scale is apt to infest the leaves, and should be brushed and washed off as soon as it makes its appearance. Tobacco-water, not over strong, is a good wash, but it must be kept from lying long on the young leaves. Examine the bottoms of the leaves and roots, and see there is no appearance of the mealy bug.

3. *BRUNSVIGIA JOSEPHINE*.—This is one of the Candelabra plants of the Cape. If the bulb was well ripened, and commenced its rest period before it was sent from the Cape, you would soon be pleased with seeing its flower-stem appearing. Narrow, deep pots are the best for the oval-shaped bulbs of the *Brunsvigias*, and nothing is better, in the way of soil, than good maiden loam, with a few little bits of dried pieces of cow-dung. Manure waterings when growing are, however, generally better. Frequent shiftings are seldom required. No stimulus in the way of heat must be given to it, until the flower-stalk and then some leaves appear. Treat it as you would a Hyacinth bulb;—let it root, and begin to shoot upwards first; but even then it will not stand the heat of a Hyacinth. It generally begins to bloom late in autumn. If your plant does not show, you must be satisfied with a few leaves, and keep these growing gently all the winter. In spring, they will stand more heat and moisture, until they

begin to ripen in the beginning of summer, when they must be rested, by dryness and full exposure to sunshine. In the following autumn the flower-spike will generally show, and then waterings must be given. The temperature of a common greenhouse will suit it in winter. It will stand a little frost without injury.

4. *BRUNSVIGIA MULTIFLORA*.—The flowers of this are brighter than the last, but, like it, it is also an autumn flower, and requires its rest period during the hottest part of the summer, and then flowers and grows in winter and spring. A warm greenhouse would suit it well. When used to the situation, so as to bloom early in autumn, a sheltered pit out-of-doors, where the plants could be well protected with glass, &c., would, no doubt, suit them.

5. *TESTUDINARIA ELEPHANTIPES*.—Both generic and specific name is somewhat descriptive; the first telling us of the resemblance of the large corm or root, to a tortoise; and the second, to the huge foot of an elephant. Small climbing shoots are produced in the growing period from this large receptacle, which produce small flowers, in spikes of a yellow colour. Seed has never been procured, that I am aware of, as the plants are dioecious, each producing only male or female blooms. It grows freely in peat and loam, and will thrive well in the warm end of a greenhouse, or in a cool plant-stove. It will want plenty of water when growing; but very little after the leaves have fallen, merely enough to keep the roots and large receptacle from shrivelling away. If the shoots do not show, it will be best to be content with keeping the plant merely during the winter. The plant possesses its chief merit more from its singularity than beauty. Temperature, during winter, from 45° to 50°; during summer, a high temperature will not injure it.

6. *HEMANTHUS COECINEUS*.—This plant is so far like the *Brunsvigia*, already referred to, that, provided a high temperature and bright sunlight can be given to it during its rest period, along with comparative dryness, it requires but a moderate heat when blooming and growing. It will thrive in sandy loam, and instead of any thing else, extra nourishment is best given in weak manure-waterings, when the bulb is growing freely, and when it shows its flower-spike. A deep, narrow pot should be used. The temperature of the greenhouse will suit it in winter. A closer, warmer atmosphere may be given to the plant in spring, before its leaves begin to die down; and a dry atmosphere and a high temperature will be its glory afterwards. Mr. Beaton, in his admirable papers on bulbs, recommends it to be grown planted out in yellow loam, in a cold pit, protected from frost, and says, that in a few years it would produce flower spathes truly grand. We have no doubt he is right. We have seen many bulbs bloom in a border close to the wall of a hothouse as they never bloomed in pots, with all the care that could be given them. How easily could an amateur have a narrow pit, some three or four feet wide, close to the side of his little greenhouse, or hothouse, for the culture of bulbs alone planted out. A small pipe might run along its front to keep out frost, or shutters might be placed in the front-wall of the house, the back wall of the pit, by sliding which, enough of hot-air would be admitted; moveable glass, or even thin wooden partitions, could be used to shut in bulbs requiring different treatment; such as bulbs that grow in summer; and, on the other hand, those that rested in summer. Dryness and moisture would be the chief distinctions, as respects these divisions; for the regulating of air alone would regulate temperature at that period. Now, the amateur is the proper person to do this, and to do it well; or a gardener, who will take the whole care upon himself; and, whatever the emergency, allow neither man nor boy to go near it. Otherwise, the particular pit will become a common receptacle for bedding-plants and other things; or some clever, young blue apron will saturate a division that could not well have been too dry. All we, who once were young, know full well, that it is not quite such an easy matter to keep the head and the hands duly working in company, though we are apt to forget this, when, on such occasions as the above, we wonder what young men will come to now-a-days! Candidly speaking, however, if in many things we are obtaining greater breadth of view, there seems to be less knowledge of, and less attention to, those *minutiae* which constitute the basis of success; and many good things are

neglected, just because, on the mere practice of routine, they cannot and will not be grown.

7. *STAPELIA SORORIA*.—This is rather a strong-growing succulent, when contrasted with others of the same family, all distinguished by their most singular and beautiful star-like flowers, and which are as disagreeable to the nose, as they are curious to the eye. The whole genus thrives in sandy loam, and lime, and brick-rubbish; and when freely growing will relish top-dressings of cow-dung and manure-waterings. In the present instance, being fresh imported, a warm place and just a little water will be desirable. When fully established, it will generally bloom about Midsummer. Before and after blooming it will require water and full exposure to sunshine. As the autumn approaches, the more sunshine it has and a high temperature the better. As the nights increase in length, in September, water must be gradually withheld, and, during winter, none must be given, unless the shoots shrivel much. Generally, they will absorb sufficient moisture from the atmosphere at that period. A temperature of from 40° to 50° will suit it then; as the days lengthen, about March and April, a little water should be given. The whole family are easily propagated. Take off pieces in spring, when in a dryish state; let the base dry well, and then insert in sandy loam, and they will soon root. The treatment recommended for Cactus will also suit this tribe. They form good companions to Aloes, Haworthias, Mesembryanthemums, &c.

8. *EUPHORBIA MELOFORMIS*.—This is a singular melon-shaped plant, rearing itself to from six to twelve inches in height, and a grotesque object among many out-of-the-way comrades. It will appear to best advantage among small succulents, such as *Stapelias* and Aloes. The treatment it requires is very similar, only it will need a little more moisture in winter, and a rather higher temperature, from 45° to 55°.

9. *EUPHORBIA SPES.*—This we are not at all acquainted with; probably the *s* is substituted for a *c*, and then it would merely signify a species. *Spinosa* is a spiny-stemmed species, from the Levant, that will flourish in our greenhouses, and has stood out of doors in some sheltered places. Whatever the species may be, one rule will be a pretty safe guide: if firm and woody in the stems, it will require more moisture in winter than if they are succulent and spongy. A warm greenhouse, or from 45° to 50° in winter, will most probably suit it. All the species, and especially the succulent kinds, when it is desired to propagate them, should be allowed to dry at the base before inserting them in loose, rough soil, such as lime-rubbish and sandy-loam. The cuttings should also be taken off when the plants are dry. Beware that the milky juice does not get access to any wound, however skin-deep.

10. *ZAMIA HORRIDA*.—*Zamia horrida* is evidently a misnomer. This plant, in its appearance, has something of a go-between a Fern and a Palm. Whoever comes in contact with its bristling leaves will find it is horrid enough. It grows freely in peat and loam; likes a fair amount of water at all times; takes what heat in summer our climate can give in a greenhouse; and from 48° to 55° in winter, with a rise of 10° or 15° from sunshine. It may be kept in the warm end of a greenhouse; but a plant-stove is its appropriate home in winter.]

BILBERRY AND CRANBERRY CULTURE.

"T. W. wishes to know if Bilberrys and Cranberrys will grow upon peat, with a subsoil of sand, if in a dry or moist situation in the shade, or exposed to the sun. When plants could be procured, or seed, which would be the most convenient mode of raising plants, if practicable."

[Cranberries grow in moist, peaty soils, such as are never quite dry; they do not require shade. Bilberrys are upland plants, and will thrive in any sandy, peaty soils, if firm. We moved several masses of the latter from their wilds, a few years since, to help to decorate some stone-walls. We merely placed thick peaty turves beneath them, the heather downwards, and skowered the masses on them. They have succeeded very well. Plants may be procured from any district where they grow wild, or seed may be obtained from such markets as Covent Garden, or from seedsmen in districts where they thrive. We should not fear your sandy subsoil, if plenty of good soil above.]

UNFRUITFUL JARGONELLE PEAR-TREES.

"I have a large standard Jargonelle Pear-tree in my garden, which has not produced a single Pear for the last two seasons. It stands in rather a dampish soil, and has the sun all day long. I may mention, also, that there are never more than three or four bunches of blossom on it.

"Last year, rather later than this, I had a gardener, who said it was 'bark bound,' which he attended to, but advised me not to prune the wood away. He promised that I should have a capital crop this year, but not a single Pear did I get.

"Having frequently entertained serious intentions of cutting the tree down, but as it is highly ornamental, being very full of leaves, and appears healthy, I would, as a matter of course, prefer letting it stand, provided anything can be done to make it fruitful.—A NORTHUMBRIAN."

[Your Jargonelle soil is too wet. Why not drain? Tie down plenty of young shoots every year, and give the tree a surface-dressing when the water is carried off. The dressing, turfy soil and manure, eight inches in thickness, to encourage surface fibres.]

APPLES, PEARS, AND PLUMS UNFRUITFUL.—PIT FOR VINES.

"I write to you respecting some fruit-trees,—these are *Apples*, *Pears*, and *Plums*, all standards, planted on strong clay ground, and been set about fifteen years, but they do not come to a proper state of bearing. Certainly, they have a little fruit on them, but of no consequence, but they always show a great quantity of blossom that never comes to a state of perfection. Under these circumstances, I wish to know your opinion what will be the best to do to improve this failure amongst my trees.

"Likewise, I have got a pit forced with hot-water, and the dimensions of the pit is—length twenty-three feet; breadth eleven feet four inches; height of back-wall five-and-a-half feet; height of front-wall three feet three inches; height of the ridging seven feet; front span-light nine feet; back span-light three feet two inches.

"Now, I wish to fruit Pines in this pit, but it has been used for growing Melons this sometime back. The pipes go along the centre, the one above the other. The top pipe is one foot two inches below the surface of the pit, with flooring above the pipes. Now, I have not height enough from the flooring to the glass for my plants. Would you be kind enough to let me know whether the house will do, and by what means I can get my plants deep enough?—H. W."

["Strong clay soil," you say; perhaps too strong—too retentive of moisture; perhaps the trees planted deep. These are sad mishaps, common to thousands, and which a little sound, practical knowledge at the planting-time would have averted. If you have stagnant water, drain thoroughly, as the first step, and directly. Any growing rampant may have their tap-roots cut, and all would be benefited by digging a circular trench around them, about five feet from the bole, and filling it up again with a free and open compost. Do all you can to encourage surface fibres. As you have been a "regular reader" of ours, just look back on our articles on top-dressing or mulching. *Pines*. The form of your roof is not very material, only they must have room to grow, and then the closer to the glass the better. As for the piping, it is plain that you have not room for the Pines overhead, by the present levels. The top pipe only one foot two inches below the roof! and then flooring over the pipes!! Why, your Pines will require quite a yard from the collar of the root to the points of the leaves. It is plain that either the pipes must descend, or the roof ascend. You cannot temporise here. You must be all over in earnest, or give up your Pines. Since advising thus, we have again looked over your case. You have overlaid it with unnecessary detail. Pray write again; say how far it is from the roof overhead to the upper pipe; this is the chief thing; also, what is the upper outline of your pit; a span, with north light, we presume.]

TREATMENT OF YOUNG VINES AND ESPALIER PEAR-TREES.

"I have planted some young Vines this autumn (Aug. 26th), for a Vinery; the wood is ripening; should I cut

them back, or would coiling the stem down in the border, leaving only two buds above ground, be a plan that would give a stronger growth next year?

"Some months ago, I hinted to my gardener, 'a professional, first-rate, go-a-head man,' that the spray in the espalier Pear-trees was getting rather plentiful; he replied, that he 'wanted rather more root-action' in the trees. The trees are now (Sept. 1) covered with a crop of luxuriant spray, from a foot to eighteen inches long, and no fruit. What should be done?—L."

[Do not meddle with your Vine wood. If growing freely, after you read this, just pinch every terminal point. Pear-trees, Sept. 1, should not be crowded with spray. The only reason for departing from the maxim, would be where trees have been hitherto weakly, or overborne. Ripening of the wood must never be lost sight of, even in a trained Pear-tree. As it is, pray let a little sunlight upon the embryo buds, though it be but for a week or two.]

MILTON'S MULBERRY-TREE.

"Does the Mulberry-tree planted by Milton, in Christ Church Garden, Cambridge, when he was a student there, still exist? And in what condition is it now?—G."

[Milton's Mulberry-tree still flourishes (Sept.) in Christ's College, Cambridge. About six years ago, the trunk, reduced by decay to a mere shell, was completely covered by a mound of earth, with the best effect. The old tree is now in luxuriant foliage, with abundant promise of fruit.—S. C.]

GREENHOUSE FLOWERS AT CHRISTMAS.

"What are the best flowers I can get so forward as to make a handsome show in the greenhouse at Christmas?—W. J., near Winchester."

[All sorts of bulbs, such as *Hyacinths*, *Narcissus*, and *Tulips*, potted directly, and when pots are full, forced a little. *Chinese Primroses*, well managed; the double varieties at the warmest end. *Cinerarias*, put into flowering-pots, say six inches in diameter now. *Camellias*, with buds set early. *Azaleas*, if forced a little. *Tea* and *Chinese Roses*, with a little heat. *Epacris*, and winter-flowering *Heaths*, that had been pruned early in spring. *Salvia splendens*, and *Tropaeolum Lobbianum*, *Triomphe de Gond*, and many other things often mentioned in these pages,—such as *Daphnes*; hardy shrubs, as *Lilacs*, *Deutzia*, *Weigela*, &c., forced. *Geraniums*, cut and topped in summer. *Ageratums*, which are ever-bloomers. *Mignonette*, sown in August, and *Violets*, managed as often described, &c.]

HEATING A CONSERVATORY.

"Being about to erect a conservatory adjoining the dwelling-house, the length twenty-five feet, and width eighteen feet, and ten feet high to the wall plate, span-roofed; it will stand lengthways, north and south, the south end to be in a line with the front of the house; both ends and the east side will be glass to the ground. We cannot have the boiler nearer than thirty-five feet from the conservatory, as we have no means of building a shed close to it. Will two four-inch pipes be sufficient to heat it? They are to go all round the house, in a walk three feet six inches wide; the pipes to be in the centre of the walk, in a chamber thirteen inches wide, with an open grating all over the pipes. The main pipe will be conveyed to the conservatory through a brick chamber under ground. What is the best sort of boiler for such a place? We have found, about this neighbourhood, for heating small places, a common iron furnace, such as is used by laundresses, covered with a sheet of iron, answer very well. Both pipes going into the top of the boiler, the flow-pipe just entering the top of the boiler, and the return-pipe reaching to four inches of the bottom.—A FOUR YEARS' SUBSCRIBER."

[1. The heat will be sufficient, managed exactly as you describe.

2. There is more in the setting of the boiler, which a good bricklayer knows all about, than in the kinds. Something saddle-shaped and conical we should prefer. No doubt, the sort you describe will answer admirably, and be cheaper than one got from a boiler-maker, but so constructed, you must manage to have the top of your boiler not a great deal lower than your pipes, or the pressure may

burst the top open. We should prefer a strong top to resist this pressure, especially as you have to convey it such a distance before reaching the house. We know of some small houses, that cost only about a fourth of what some boiler people charged, just by using a boiler exactly as you propose.

3. Let the chamber be open to the house, and you lose little heat; have an opening at the boiler end for air, and you may thus always have fresh air in the house.]

HEATING PINERY AND VINERY WITH ONE BOILER.

"Will you be so good as to give me your opinion on the heating of a Pine Stove and Vinery from one boiler. The boiler is one of those which I call a tubular boiler; it has eight upright tubes connected to two circular flat ends. I believe it is Mr. Weeks's invention. The flow pipe is only a three-inch pipe, and it has to fill two six-inch pipes, and return into the boiler by a three-inch pipe again. The three-inch pipe only runs five feet before it is connected to the two six-inch pipes, and then it runs round the house, and is then connected to a three-inch pipe to return into the boiler, the same length as the flow. This is the Pine Stove. The Vinery has four six-inch pipes down the front of the house, and is connected to the boiler by a three-inch pipe. This is my predecessor's plan. I intend building some pits for Pines and Melons, and am thinking of having a saddle boiler. The pits will be fifty feet long, in three divisions, and I am thinking of having the flow-pipes rather larger than the return. But I will have your opinion on it, if you will have the kindness to give me it. I would also like to know what taps or valves are the best, or if you know of any other invention better than them, as I have heard of one.—J. J."

[1. The mode of heating you describe, as you no doubt find, will answer admirably. The flow will be quicker than if the flow and return at the boiler had been larger; and much practice with the sort of boiler spoken of, as well as others, confirms us in the opinion that the boiler is unexceptionable. We presume you can heat the Stove and Vinery separately, at pleasure. Mr. Weeks generally has valves or stop-cocks for that purpose.

2. We have no doubt your proposed plan will answer, though we see little advantage or disadvantage in having the return-pipe smaller than the flow one. Except the neatness, convenience, and expense of the thing, when several places are to be heated from one boiler, we place wooden-plugs, valves, and stop-cocks, on the same category. When several pits are to be heated, it is best to take the flow-pipe to a common cistern, and then branch off from thence. If one range in several divisions is to be heated, valves at the intersections will be necessary, unless you regulate by air, and do not mind a little fuel. For this purpose, though we have not tried it, we believe that nothing answers better than a small pipe between the several junctions, such as one or three-quarters-of-an-inch in diameter, and supplied with a tap, such as is used for a beer-barrel. Those who have never tried it, would be amazed to find how soon such a small opening will suffice to heat the water beyond it.]

POULTRY.

BILL OF THE AYLESBURY DUCK.

"I have some Aylesbury Ducks with black spots on their beaks. Will this prevent their taking prizes? They had none when they were hatched; in fact, they have only appeared lately.—X. Y. Z."

[So great a blemish in appearance as is caused by the presence of black spots on the bill of an Aylesbury Duck is always considered to disqualify a bird thus defective. This stain is of comparative rare occurrence in ducklings; but usually appears the concomitant of advancing age, and this irrespective of certain conditions which have been sometimes considered as likely to induce this discolouration, such as being kept on a peaty soil, or having access to water flowing from a bog.]

POULTRY-PENS AT ALTRINCHAM.

"We perceive you make favourable mention of our Patent Exhibition Pens, as used at the Altrincham (Manchester and Liverpool Agricultural Society), and Radcliff (Bury and Radcliff Agricultural Society), Poultry Shows. But you say, 'One only drawback remains for explanation, and we trust its simple mention will altogether prevent its repetition in future years. Many of the pens were still unpacked at the time the public were admitted, and, consequently, the judges, whilst awarding the prizes, were crowded upon on all sides by the interested and contending exhibitors, &c.'"

"In this article, you do not mention our names as the contractors, and we did not, therefore, at first, intend noticing this paragraph; but as we have since come to the determination of publicly advertising our pens, we consider it but fair that as prominent a place should be given to our explanation as to the paragraph, which, without such explanation, might injure our credit as contractors; and we shall, therefore, feel much obliged for the insertion, in your next number, of this letter.

"The Altrincham Show was the first one for which the pens were hired, and, consequently, we manufactured *only* the number ordered, viz., 100. But on the Tuesday preceding the show (which was held on Friday), we received orders from Mr. Neild (of the local committee) for upwards of 150 more, as that amount would be required. As the pens require being galvanized after manufacture, it was impossible for us to get them on the rails before the Thursday, and the Railway Company did not bring them to Altrincham till about 10 o'clock on the Friday morning. You will, therefore, see that there is no fault appertaining to us; and as to the Radcliff Show, which took place on the Monday following, the *same pens* had to cross the lines of three distinct Railway Companies, and it was solely in consequence of the squabbling between the rival companies that the pens were not delivered in time.—B. GREENING & Co."

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

SENDING POULTRY TO EXHIBITIONS (S. I. Lo).—It is quite impossible to answer for their safety; but they are continually sent hundreds of miles to such exhibitions without any attendance, and return quite safe.

CUCUMBERS (H. P.).—You can grow Cucumbers in boxes in your plant stove, if you place them close to the glass. We can give no advice whether you should do so, for we know nothing about your place or plants.

BURNING CLAY.—Twig, as well as ourselves, will be much obliged by anyone giving full directions how this can be effectually done. Mr. Barnes did not publish a book upon the subject.

PLANTS FOR NEW ZEALAND (W. L. T.).—If you refer to our 265th number you will find full particulars. They are too long to extract.

PLANTAIN IN LAWN (Slater).—There is no mode of destroying it but by cutting it out with a knife or spud, and putting a pinch of salt into the hole. The ammoniacal and other fumes from Gas Tar are beneficial to plants, but destructive to insects; so there may be something in this extract you have enclosed.—"A discovery, which is likely to be of great advantage to agriculture, has just been reported to the Agricultural Society of Clermont (Oise). A gardener, whose frames and hothouses required painting, decided on making them black, as likely to attract the heat better, and, from a principle of economy, he made use of gas-tar instead of black paint. The work was performed during the winter; and, on the approach of spring, the gardener was surprised to find that all the spiders and insects which usually infested his hothouse had disappeared, and also that a vine, which, for the last two years, had so fallen off that he intended to replace it by another, had acquired fresh force and vigour, and gave every sign of producing a large crop of grapes. He afterwards used the same substance to the posts and trellis-work which supported the trees in the open air, and met with the same result, all the caterpillars and other insects completely disappearing. It is said that similar experiments have been made in some of the vineyards of the Gironde with similar results."—Galigani.

WEEKLY CALENDAR.

D M	D W	OCTOBER 17—23, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
17	Tu	Mallow Moth.	29.242—29.070	56—33	S.W.	31	29 a 6	2 a 5	0 46	25	14 33	290
18	W	St. LUKE.	29.447—29.396	57—34	W.	—	31	0	2 0	26	14 44	291
19	Th	Red-green Carpet Moth.	29.152—29.940	53—46	E.	36	32	1v	3 13	27	14 55	292
20	F	Streak Moth.	29.810—29.373	56—32	N.W.	—	34	56	4 28	28	15 6	293
21	S	Sun's declination, 10° 42' s.	29.846—29.753	60—50	S.W.	08	36	54	sets.	29	15 16	294
22	SUN	18 SUNDAY AFTER TRINITY.	29.937—29.814	64—53	S.W.	—	38	52	5 a 13	1	15 25	295
23	M	Autumnal Dagger Moth.	30.080—29.970	65—42	S.W.	—	39	50	5 33	2	15 33	296

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 58.5°, and 41.4°, respectively. The greatest heat, 73°, occurred on the 21st, in 1830; and the lowest cold, 20°, on the 21st, in 1842. During the period 99 days were fine, and on 90 rain fell.

“FEW men are alike in their general views, and few men combine with genius the clear comprehensiveness of common sense. Genius is too apt to soar above matter-of-fact duties, forgetting, in the realms of ideal conceptions, that the necessary and instructive lessons of every-day-life are those by which we are mostly governed, known, and distinguished; those by which the application of human attainments is converted into a moral, a fame, or a disgrace.

A man, gifted with the combination of genius, with a sound, practical knowledge of his avocation, is an exception to the common rule of life, and assumes a special position, influencing and controlling in ordinary transactions all those within its sphere.

In studying the history of Mr. Fleming, we shall find a singular instance of the truth of these remarks; a history abounding, as it does, in examples of integrity, energy, and intellectual discrimination, which in our pilgrimage so rarely visit us united.

MR. GEORGE FLEMING was born at Dunrobin, in Sutherlandshire, on the 15th January, 1809. His father, who originally came from Fifeshire, then held the situation of head-gardener to the (late) Duke of Sutherland, then Marquis of Stafford, and in which situation he died, in 1824, having filled it for a period of nearly thirty years.

He was a man of great taste and energetic character; and was so well versed in the duties of his profession as to obtain the reputation of being one of the first practical gardeners in Scotland; added to which, the kindness, urbanity, and moral habits of his private life, gained him the esteem and confidence of his superiors; as well as the sincere friendship of all dwelling in the neighbourhood. He never visited England; but lived and died among the mountains and fertile valleys of his native land. When about seven years of age his son GEORGE, the subject of this memoir, was put to a school at Golspie, near to Dunrobin; which he attended, but not regularly, till his twelfth year. During this time his talents appeared of a very ordinary kind, giving no evidence of any of those qualifications by which he has since been distinguished. On leaving school, he first entered fully into the duties of his choice of profession under his father's able tuition; but, being of a delicate constitution, it was only (at first) in the summer months that he was able to attend regularly to them. As time, however, wore on, his strength gradually increased, and when in his fourteenth year, on the death of his father,

he went to Trentham, by the express desire of the late Duke and Duchess, for improvement in the gardens—Mr. Woolley being then the head-gardener. He remained there four years, working carefully and steadily through every department, and at last became such a proficient, that Mr. Woolley told her Grace, the late Duchess-Countess, who never visited Trentham without kindly enquiring for him—“He could teach him no more.”

This remark seemed to justify her Grace's opinion of his character when a boy at the Dunrobin Gardens; and accordingly she intimated her wish to have him sent to the Royal Horticultural Society's Gardens at Chiswick. The kind intention, however, was, for some reason, never realised, but the same year Mr. Woolley obtained employment for him at Messrs. Buchanan and Co.'s Nursery, Camberwell. He there, by his industrious conduct, and intelligent manner, secured the interest and friendship of that eminent firm, and at the end of two years he was appointed by them as foreman of twenty-two men, to assist Mr. Buchanan, jun., in planting and improving the estate of Charles Ranken, Esq., situate at Dulwich, where that gentleman is still living. This undertaking, which occupied from November to March 1830-1, furnished ample scope for the employment of his dawning genius, which so struck the attention of Mr. Ranken, that he at once offered him the situation of head-gardener. Mr. Fleming at first declined the kind offer, in consequence of hopes held out of his services being required as foreman at Trentham. These hopes proving abortive, he ultimately acceded to Mr. Ranken's wishes, and was installed in his first situation, as principal, at the early age of twenty-two. He remained there eight years, to the great satisfaction of that gentleman, who easily perceived his worth, and unhesitatingly bestowed upon him the credit and kindness it deserved. As an exhibitor, he was very fortunate, having obtained during that time upwards of thirty prizes at the Chiswick and Metropolitan Exhibitions.

Being desirous of having the management of more extensive operations, Mr. Ranken did all in his power to assist him, and hearing that the Duke of Buccleuch required a head-gardener at Dalkeith, he gave him some excellent testimonials to forward with his own application. His Grace the (present) Duke of Sutherland, likewise interceded in his favour. On the receipt of the Duke of Buccleuch's answer, which was a very



G. Fleming

kind one, it was found that the situation had been filled the day previously to Mr. Fleming's application. But the Duke of Sutherland, by this means becoming aware of Mr. Fleming's wish for a higher appointment, sent for him to Stafford House, where, by the Duke and Duchess in person, he was offered the situation of head-gardener at Lilleshall, one of their Grace's fine estates in Shropshire. This was in the year 1839, and, singularly

enough, on the very day that he arrived at Lilleshall, the noble and kind friend of his early life, the Dowager Duchess-Countess of Sutherland, died.

On arriving at Lilleshall, Mr. Fleming found the system of operation very deficient in practical utility, and the plan of the grounds but imperfectly carried out. He, therefore, immediately commenced his improvements, and by the following August had effected so

complete and favourable a change, as to receive their Graces' most marked approbation of his industry and judgment.

He remained there till September, 1841, when, to his great, but agreeable surprise, he was again transplanted to Trentham. This was an animating, and most suitable promotion, for Mr. Fleming was in the prime of life, anxious for the distinction his energies and practical genius urged him to acquire; and he had now placed under his management what is one of the most perfect practical gardens in Europe.

We have now arrived at the most critical point of Mr. Fleming's position as a professional man; a position requiring the greatest nicety of observation, and the most indefatigable exertions, combined with genius, to sustain, when we consider the serious and established disadvantages he had to contend against. The late Mr. Loudon gives a very unfavourable opinion of Trentham, founding his reasons on the deteriorating influence of the atmosphere, the very low situation, and the cold, wet, and heavy nature of the soil.

Mr. Loudon was well qualified to be an authority, but if it were possible for him to see Trentham now, his fears would be turned into pleasure, and his complaints into tones of admiration.

Mr. Fleming himself was often on the verge of despair, but hope sustained him amid all his trials. As an instance of what we consider the chief evil he had to overcome, he relates, that shortly after his arrival at Trentham, some men were employed digging on a sloping piece of ground in the kitchen-garden. About half-an-hour after they were gone to dinner, Mr. Fleming, by accident, came to the place, and one can scarcely imagine his surprise and chagrin, on finding the trench completely full of water, although the weather for the previous week had been free from rain. To banish this serious enemy, he immediately commenced a series of drains, about six feet deep, under the principal walks of the gardens, and draining at a lesser depth the secondary or working paths, by which means the stagnant water found an outfall into the river Trent. To increase the beneficial effect of drainage, in every successive trenching the subsoil was turned up to the depth of five or six inches, and the ground abundantly dressed with turf-mould, burnt clay, the ashes of charred refuse, vegetable matter, and manure. By systematically following up this plan for some seasons, he long since obtained an active soil, ranging in depth from three to four-and-a-half feet, instead of but one, as was originally the case. He can now depend on a good average crop, generally speaking, although it has been remarked, that *Asparagus* once grown there was more fit for flower-sticks than the table!

The year previous to Mr. Fleming's appointment, Mr. (now Sir Charles) Barry, had designed certain improvements in the Hall. These were now completed, and Sir Charles had drawn out a most beautiful and approved plan for a flower-garden, in the Italian-terraced style, to be laid down in the front of the Hall. This garden was commenced shortly before Mr. Fleming's arrival.

It is not our intention to enter into a description of this now celebrated specimen of Italian floral architecture; the carrying out of many details of the original design was much assisted by Mr. Fleming's knowledge of the desired plants, judgment, and taste.

The introduction of classical vases and statuary into these gardens is of more importance than a cursory glance would indicate. It is not every style of landscape-gardening that such objects contribute to beautify and refine; but the long, broad walks, the turf-covered and sloping terraces, the surrounding woodland scenery, and the now clear, transparent, and island-dotted lake, required such artistic embellishments.

While contributing to the progress of the flower-garden, Mr. Fleming's attention was drawn to the adoption of several improvements in the horticultural department. Among others, a beneficial system of pruning Peach, Apricot, and Nectarine-trees, and the bringing into notice the great advantage of the old trellis-work, in the training of hardy fruit-trees, which are simply these;—They should always, economically speaking, be erected over most of the principal walks, which are thus, in summer, refreshingly shaded, and form delightful promenades; the fruit is always exposed to a free circulation of air, as well as sufficient sun; and while the health of the plant is thus preserved, a fine and imposing appearance is given to the whole character of the place. We believe, since Mr. Fleming's adoption of this plan, that it is now extensively approved of, and used in many gentlemen's gardens.

He also tried an experiment in the Vineries, introducing bottom-heat on a different principle from that previously known, and by this means succeeded in producing fine clusters of Grapes (*Black Hamburgh*) in February, in approbation of which, the Royal Horticultural Society awarded him a prize two successive years. This undertaking and its issue caused a great sensation among professional men at the time—1845; but one house being sufficient for the purpose to which his views were directed, he has not extended this method of early forcing.

As a Pine-grower, Mr. Fleming has been eminently successful; it being a subject that has received his greatest attention, and on which he has directed his best energies. Although he made a considerable reduction in the number of his Pine-pits, he was able to work out in every detail an important idea he had conceived; which combined, with the improved general culture of the plant, a most economical, simple, and yet conclusive system of artificial heating; and, by carefully aiming at, as far as circumstances would admit, a clear and precise knowledge of the West India temperature, he thereby so regulated that of his pits as to obtain, and is still doing so, some of the most weighty and beautiful fruit ever grown in England.*

Mr. Fleming's first essay in Architecture was a design for a Gothic cottage, intended for himself, and where he

* One, a *Ripley Queen Pine*, exhibited at the Royal Horticultural Society, October, 1849, weighed 7lbs. 10z.; but a weightier one was grown the same year; also a *Providence Pine*, weighing 14lbs.—See Mr. Fleming on "Cultivation of the Pine Apple."

now resides. The original sketch was subjected to Sir Charles Barry's inspection, who was much pleased with it, and so far complimented Mr. Fleming as to work out some of the minor features himself. It is a light and very elegant structure.

Situated near the river, on the site of the present structure, was an Orangery, on the old-fashioned, half-dark principle. This being considered too small, from the rapid accumulation of many very valuable and interesting plants, it was condemned; and plans, with estimates, ranging from four to six thousand pounds, from several eminent firms, for the erection of a more commodious one, was submitted for approbation. These being rejected, Mr. Fleming applied himself to a careful analysis of the principles set forth as indispensable in the formation of the required conservatory, which resulted in the erection of the present admired structure, at a cost of only £1,500!*. The principles observed in the construction of this house being new, it will not be irrelevant to our subject if we cursorily enter into a few of the details of the building. The outline is a parallelogram, being eighty-nine feet long, and sixty feet wide, and the height fourteen feet. To keep the whole roof at this height, and which was of course desirable for the health of the plants, hollow columns, in five lines, eight in each line, were used to support nine ridges of glass, the gutters resting on the columns, and the rain-water being conveyed through these columns to underground-drains immediately beneath them. These columns are forty in number, and fourteen inches in circumference. The gutters are sufficiently wide to allow workmen to walk along them, and in the heaviest thunder-storm have always been found adequate to the emergency.

To obtain a thorough ventilation in so extended and level a roof was a point which most required study; and as nothing of the kind then existed, that Mr. Fleming was aware of, to give any idea to work upon, his genius soon supplied the desideratum. It occurred to him, that, by having the gutters nine inches wide, as many of the sashes as might be found desirable could be made to slide down so far; and, to balance them methodically, ornamental baskets, suspended by ornamental chains, brought over pulleys fixed under the ridge-piece were used. These, arranged in longitudinal lines on each side of the paths, have a very graceful effect, being mostly filled with trailing plants, which blend well with the surrounding foliage. These baskets have now been in use at Trentham upwards of ten years; and their introduction into the Sydenham Palace adds very considerably to the picturesque effect of the internal arrangements of the "plant" department of that building.

In connexion with this Conservatory, the back of which forms part of the boundary of the kitchen-garden, and continued up the south wall, is a long range of glass buildings, known as *The Trentham Wall Cases*,

* This Conservatory was erected in the year 1843; and Mr. Fleming has received the highest praise from Mr. (now Sir) Joseph Paxton, Mr. McIntosh, Mr. Marnoch, and others, for this structure, which is allowed to be one of the best houses known for the growth of plants.

for the cultivation of such fruit as Peaches, Apricots, Nectarines, &c., which there arrive at the highest perfection. The credit of designing and erecting these beautiful buildings is entirely due to Mr. Fleming; and it is his intention to continue them from the Conservatory and south wall, along the east and north walls, to his own house, thereby forming a glass-covered walk of an unusual and extraordinary extent. They form quite an architectural feature in the garden, and may, with propriety, be joined to either conservatory or mansion.*

We now come to Mr. Fleming's last, and, perhaps, most important work,—the cutting of a new channel for the river Trent. The original channel passing through the lake (consisting of eighty acres) was found to be both disagreeable and injurious, in consequence of the great amount of mud collected from various sources above becoming distributed over the extent of the lake, thereby impairing the purity of the water, and, of course, adding to the unfavourable state of the atmosphere. These, with other considerations, led to the undertaking now so ably accomplished, and the lake, entirely fed by a beautiful spring of water in "Spring valley," adjoining, is singularly clear and transparent. The new channel, running as it were parallel to, and on the eastern side of, the lake, was begun in April, 1853, and completed, with a rapidity and soundness quite astonishing, by the following September, at a cost of only £1,500! It is about three-quarter's-of-a-mile in length, the depth varying from five to fourteen feet, and the width, at the water line, on the average, fifty feet.

There is one circumstance attending the execution of this design which we feel a pleasure in recalling, as it is not only creditable to Mr. Fleming, as a practical man, but cannot fail in proving of great interest to a very numerous class of our readers. As the new channel was intended to pass through a part of the pleasure-ground where some very important clumps of choice evergreens had recently been planted, and which were becoming most interesting objects from several parts of the grounds, many were the conjectures as to the effect, not only of the new stream, but also of the removal, during the summer months, of so many large trees and shrubs. The cutting looked formidable indeed for a time; but, by the end of July, not only were the trees and shrubs luxuriating in new-made clumps, but the whole aspect of the work, as far as the grounds extended, presented the appearance of having been done many years.

This method of giving an aged and natural effect to newly-made grounds was, as we before observed, peculiar to this place, and consists of the following rules:—As soon as the principal plants are in the ground, and all finished off, such plants as the *Menziesia*, the common heath, *Gaultherias*, &c., are used to cover the ground so entirely, that, by notching them into the grass irregularly and at intervals, none but those employed,

* These buildings are fully explained, with diagrams and other detail, illustrative of the principles of ventilation, &c., in McIntosh's "Book of the Garden," vol. 1, p. 353.

or who have seen the work done, would be able to distinguish it from surrounding objects of years' standing.

With a reference to his excellent views respecting porous and non-porous flower-pots, we must draw to a conclusion. He says:—"There are few gardeners, even at the present day, who have not a strong belief in the advantage of porous pots, for the growth and health of plants, over glazed and non-porous ones, or those made of zinc; but I have a decided opinion in favour of the latter, founded on the experience gained from much attention I have paid to the subject. The porous pot, simply from the fact of its being so, becomes, in a very short time, saturated with moisture; and this very capacity for moisture renders it unfit for use; for example, the natural action of the plant not being active enough to abstract this moisture from the pores of the pot, causes it to have an unhealthy influence on the tender fibres of the plant which come in contact with its inner surface; and when it has been long in this stagnant state vegetation takes place on the outside, first in the form of green unsightly slime, and then of moss; and hence, a great deal of trouble in washing it off, beside the injury to the plant growing in it. The glazed, or non-porous pot, absorbs no moisture, and is always clean. Evaporation of any excess of moisture after watering takes place from the surface; and the inner surface of the pot dries with the soil. Plants, as has often been proved at Trentham, carry a more healthy appearance than those under the same treatment, but in common pots. Zinc pots are even better than glazed ones."

We believe these zinc pots to be Mr. Fleming's invention; or, at any rate, their introduction at Trentham is entirely owing to him; and it has often been observed by visitors, that the plants in zinc pots have a remarkably luxuriant and healthy appearance.

We will close this memoir by drawing the attention, not only of young and aspiring gardeners, but of all young men whose future position in life rest mainly on the means used to acquire it—and those means are the same which have made Mr. Fleming so distinguished—Energy, Attention, and Perseverance."

BOTTOM-HEAT IN ITS RELATIONS TO ATMOSPHERIC TEMPERATURES.

WHAT is termed by gardeners bottom-heat, is, I fear, considered by many to signify some very high temperature of the soil or medium in which the roots of a plant are situated, almost irrespective of the air-heat. It is, doubtless, considered too abstractedly; that is to say, without a due regard to the relation it bears to light and heat. If any tyro in horticulture should doubt the propriety of sustaining a proper relation between these important elements, let him boldly destroy their balance, for the sake of experiment; let him make up a hotbed-frame at a period when a low air temperature prevails, but no possibility of frost—say in September or May—and let a bottom-heat of 80° be secured, and Cucumbers, or any other thing that will speedily show the effects of good or ill-management, be planted in such medium. We will now fancy them established, and then let him first try the effects of a

comparative absence of light; we will not go so far as total blanching; let him fasten a canvass or other screen over the light, and he will soon find a thin, pale foliage, attenuated habit, and their necessary consequence, barrenness.

Again, to test the temperature affair, let the same bottom-warmth be sustained, and let the atmospheric warmth be kept at a very low pitch, say 50° to 60°. I will not undertake to say precisely what result would appear, but the system of the plant would be completely perverted. These things being admitted, it is evident, that a proper consideration of the relation these elements bear to each other becomes a matter of much importance, not only as sustaining a healthy balance in the system of the plant, but as furnishing, by slight deviations, when requisite, from that exact balance, means whereby important objects may, at times, be carried out. I would here, more especially, point to its application to late autumn or winter-flowering plants, and even to forcing processes. In both these cases, the needs of *forcing fruits or flowers* are very different in character from those of the winter or spring. The autumn may, in broad terms, be called the period of consolidation, or, as gardeners have it, the "ripening period;" the spring, the period of development. Of course, all the world know this, but I wish to make a special application by such reference. In winter or spring forcing, care is taken to nicely apportion the atmospheric warmth to the amount of light, as, also, the degree of air-moisture; as the process of mere development of parts already formed, and in an excitable condition, would not be carried out so well by imitating the *arid* conditions of an autumnal sky.

This is all as it should be; but it is as much the good cultivator's concern to feed and perfect those buds whence emanate blossoms or fruit, as it is to develop them in a proper way afterwards. The question, then, is, can those relations of heat, ventilation, and air-moisture, be so modified by the cultivator as greatly to facilitate the production of superior blossoms at the flowering or forcing period? I have now arrived at the point of my enquiries; and I do think I can make it appear that something may be done.

To illustrate the matter, I will call in to my assistance a few things with which all are familiar; for such, indeed, will best serve our purpose. The *Neapolitan Violet*: everybody knows this, and most gardeners cultivate it. Now, this Violet may be had in blossom, in a continuous way, from the end of September until the middle of May, or even later; and that, too, from one plant, or one set of plants. It is with us propagated in May or June, from runners or cuttings, and receives good culture through the summer months. In the very beginning of September, they are planted in a brick-pit, and here they remain until the end of March, when the pit is required for other purposes.

Such a pit, of the finest young plants I ever saw, I have now, and I am putting in practice, daily, the very principles I have here alluded to. I have a bottom-heat of about 70°, produced by dung and leaves trod firm; this heat will be of an abiding character for about three weeks; it will then speedily decline, as I wish it, being composed, in the main, of leaves in a highly-decomposed state, and by the middle of November, or sooner, will be quite cool. The plants have not received a drop of water from a pot—merely syringed; and the lights are propped up, bottom and top, for the wind to blow through them, or even just to have a smell occasionally of one of those little autumn hoar frosts which make careful gardeners begin to put their house in order. Now, I have not tried the air-heat of this pit, but, assuming that the average day-heat, for a week, is about 60°, and of the night, about 50°, here will be an advantage of a dozen or fifteen degrees in favour of a bottom-heat!

This is not a mere sudden whim, be it understood. I have done thus with the Violet for years, and have had capital success: this year, however, I am pushing the principle further still. And what may we fairly suppose is the present effects of such a course on the Violets? Perhaps this will be best answered by looking into the question of effect by a natural course. Violets, left in the open ground to nature's bottom-heat, we all know will blossom occasionally through the winter, during mild periods; but this is rather uncertain. Now, such a climate as the pit here described affords, just overcomes those extremes of temperature and stress of weather which is aversive to their habit.

But in this pit, suppose they were indulged with an air-heat equivalent in common practice to the ground-heat directly they were planted, what would be the consequence? The plants would speedily elongate in their leaves and leaf-stalks; they would have a tendency to smother themselves with runners, and abortive and premature bloom would be the result. As it is, all the efforts of the plant are directed to the forming a stout crown, just as with Strawberries intended for forcing; and from whence will emanate scores of bouncing blossoms, composed of unusually large petals; so I have ever found it.

But we must not rest here in the application of this principle; nor suppose that it is applicable only to so simple a thing as a Violet. This, as before observed, was selected simply for illustration. What may not be arranged in this way on behalf of some winter forcings, whether of fruits or flowers; what about the autumn management of what are called genuine winter flowers? This is, I feel, in some degree, untrodden ground, and requires that all advances be made cautiously; like the military strategy of Old Nick of Russia, a secret mine may spring beneath our feet, in attempting to advance on apparently sound ground.

To come to the point. It has always appeared to me a most desirable affair, that all gardeners, or others who have the objects before alluded to to carry out, should have a roomy, brick pit, or other structure, at liberty, for this very purpose, in the end of August, and to secure a bottom-heat of about 70° to 75°, of a character to continue until the end of October. In such a pit, flowers, and even fruits, under certain circumstances, might be plunged up to the rim of their pots in tan, or other warm medium. Here they might receive, liberally, ventilation and light, and be kept at the lowest temperature, as to air-heat, possible, barring frost. This may seem to some an odd idea, and may be termed an unnatural procedure; but I am not assured that it is so unnatural as one might be disposed to imagine. When we come to examine the character of climate in some foreign climes, we find occurring, at times, an enormous discrepancy between the air and ground-heat. We have often heard of the excessively low night-temperature, as compared with the day-heat—in some of the West India islands about 90° in the day, falling to some 55° to 60° at night, and even lower. I speak from memory, however; and, doubtless, the climatic history of many countries, whence we have received flowers or fruits, would equally astonish us on a closer examination of the subject.

With regard to flower-forcing, or the particular culture of what are termed winter flowers, I believe that much may be done in this way. About two or three years since, somebody recommended bottom-heat for flowering the Chrysanthemum in superior order; and, doubtless, a capital recommendation too; proceeding on the very basis here suggested of a discrepancy between ground and air-heat. Everybody knows that our climate is notorious for starving winds towards the end of September; these winds are, perhaps, greater refrigerators of the soil than people commonly imagine. This rapid

cooling down of the soil, by much diminishing the root-action at the time of greatest need, is not by any means favourable to the production or perfecting the blossom-buds of many of our tropical flowers or fruits.

There are many things which, under such circumstances, would succeed much better if taken up from the open ground, and potted in the end of September, than by being kept altogether in pots. For instance, amongst shrubs, I would point to such things as *Deutzias*, *Weigelia*, *Forsythia*, *Honeysuckles*, *Persian Lilacs*, *Jasmines*, and even the *Moss* and *Cabbage Roses*, as capable of being brought under a system of the kind, and as simplifying labour by such treatment; these, however, are what are termed "forcing" matters. Pinks are sometimes lean affairs when forced early, being grown in pots previously; and I am going to-morrow morning to try an experiment on this interesting flower. I had some stout plants left this spring of the *Anne Boleyn*, a favourite forcer; these, last spring, had been slightly forced for bouquet purposes. About Midsummer they were thinned and pruned, turned out of their pots, the fibres disengaged from the ball of soil, and then planted out in a bed, the surface of which was dressed with the surface of an old mushroom-bed, viz., loam and manure. They have now become very robust, and I shall pot them, and subject them to such treatment as I described for the Violets. I have little doubt of their succeeding in all.

Then there are the Bulbous tribes, many of which may be thus handled under a slightly moderated course. It is now well known that it is of little use forcing these until the pot is nearly full of fibres. This, if I mistake not, I was one of the first to point to, most emphatically, years ago; and it is now generally recognised. It will be found, that when they have rooted tolerably freely, and the bud has begun to move in a natural way, a bottom-heat of 70° maximum, with as low an air-heat as is consistent with their steady development—say about 45° to 55°—will cause them to progress beautifully, and the truss will rise in compact form as it ought to do.

I have now, I hope, said enough to show that the full consideration of this matter is worthy the attention of every lover of a garden. If there be any truth in what I have here advanced or suggested, the application of the principle is as open to small gardens as to great ones, involving no expence worthy of consideration; indeed, in some respects, a real economy, as a labour question.

I wish much that it may obtain interest enough to induce some of our friends, who join science to long experience, to give us their views; it requires more heads than one to show it forth as a system.

R. ERRINGTON.

CRYSTAL PALACE.

(Continued from Vol. XII., page 492.)

THE principal divisions of the terrace-garden are laid out in panels, as we gardeners say; the fountain-basins are in the middle of a panel where fountains are introduced, and the planting of the flowers is exactly on that principle which I have all along insisted on in these pages, just to the very letter—neutral centres, and the strongest colours all round the outsides, so as to give the full extent in perspective to a given space, instead of diminishing the real, or apparent extent, by gathering the strongest colours into the centre, as was the custom with many, till I broke the ice, and made it dangerous to get to the middle of a panel with a load of Scarlet Geranium over the shoulders.

But what is a panel? A Scotch lawyer would say a panel means a jury-list, and pannel means the prisoner at the bar, the double *n* making all the difference. If

you ask a builder the meaning of the panel, he will tell you it is a square of wainscoting, and of other things, down to the front-door which he has just panelled, the panols being the sunk parts. In the language of landscape-gardening, we follow the builder rather than the lawyers, and we say of a piece of ground which is below the general level, that it is a panel, or sunk panel, whatever the shape of it may be; but if the Lord Advocate had to explain the formation of the Italian garden at the Crystal Palace to Lord Brougham, very likely the ex-Chancellor would understand him if he wrote that the grounds were laid out in *arrays of panels* from north to south, or nearly so. Therefore, if some people can hardly comprehend my panels, from not having seen a space of ground sunk on purpose, or the surrounding tracts risen, which comes to the same thing, others will understand me at once, from their own knowledge of how panels were made.

Now, if an upholsterer had orders to furnish a room, or a cabinet-maker and joiner had orders to make the furniture to suit, and the master found, when all were done, that his tables and stands, great and small, were all made circular, would it not be excusable if he said so-and-so about his tradesmen, when he found that none of his tables, or stands for ornaments, would suit the corners of his drawing-room, or any room in the house? all the rooms having square corners, and all this profusion of furniture being of circular outline. When you place the common-shaped oblong table up in the corner of a room it fits exactly, and no space is left as when a round table is put in, a fact which every housemaid in the country knows as well as any of us; and no housemaid, who is worthy of the name, has ever been known to place a round table exactly in the corner of a room, "case it won't suit." I have assisted housemaids to "shift" tables and stands, I know not how many hundred times, and I know the philosophy of their whole secrets from the drawing to the lumber-room and linen-closet, so that I have actual proofs of what I assert about putting round furniture into square corners; and if you take Euclid on the point, he takes the side of the housemaid: then, if you take Euclid, or the housemaid, or your humble servant, or all three of us, you will find we are all opposed to putting or making round beds in a square corner; but you may do just as you like, and if you do not square with us, you will find a precedent, in your favour in one of the grandest gardens in Europe.

But there is another side to the question, and that side of it was brought before me but the other day. I met a gentleman from London, in the neighbourhood of Kingston; he said he expected to see me, and had two plans of a new flower-garden he is making, which he brought on purpose to show me. It is an oblong shape, with a walk all round, and in each of the four corners there is a circular flower-bed; they were proposed and fitted for the corners by the "Lady of the hoose," as they would say in Scotland: most ladies like a "good fit," and know how to arrange for it. The corners of grass were rounded off, and the circular beds had two feet of grass verge between them and the walks; there could not be a better fit, and it is easier and more genteel-like to walk round these corners and beds than to turn sharp at an angle. The whole flower-garden is laid out on the promenade system; that is, with all the flower-beds alongside of the walks, as they are in the Crystal Palace-garden, and most other public gardens; therefore, circular beds at the corners, and the corners cut off to fit, are by far the best: then with groups of shrubs, or single trees, or shrubs, here and there, a little farther from the walks, and a free open space all along the centre, a garden of this kind is perfect in itself, and looks larger to a stranger than it really is, on account of the centre being free from end to end.

All the planting of flowers, trees, and shrubs that you see at the Crystal Palace is done on this principle—promenade fashion; and vast as the whole is in reality, when you walk along, every part and place looks larger than it is, in fact, owing to this judicious way of planting. It is a mistaken notion altogether to suppose, for one moment, that this garden is too large for any one to try to imitate it, or anything in it,—because the principle can be applied, and the very shape of the beds too, *in any space whatever*; yet one gentleman out of twenty cannot see that; but others do. This very gentleman from London wished to have a group of Rhododendron-beds in the very centre of his garden, and it was for that group he had the second plan with him, but the "guid wife" would not hear of it, and I was appealed to; but now I shall be spared, as I shall point in future to what is done in the people's own garden at Sydenham.

As to the flower-garden plants, and the number of kinds of each family, we must not be guided by what was done there this season, confessedly, in a very great hurry; but nothing is more instructive, or better to learn from, than keeping memorandums of the plans of planting for each year separate. I have every bed and border in the garden booked for myself, as they were planted this season, with private remarks, which I shall not let out of my hands for the first three years after the whole is completed. Of Scarlet Geraniums, the greatest number are of *Tom Thumb*, then *Compactum*, after them, a *Horse-shoe* kind I did not know; but this kind did not seem to be suited for the soil; it did not look happy; the caterpillars took to it, and it was beaks all over, going to seed; I would discard it from the collection at once; beds of it were in the north-east of the terrace-garden, edged with light purple Verbenas. In some rows of mixed Scarlets were a few plants of *Punch*, the *Frogmore Scarlet*, and a few other mixtures. All the vases, of which there are hundreds, were planted with mixtures, Scarlet Geraniums being the ground colour of all of them; and throughout the whole of them not the least deviation appears in the planting. A few *Calceolarias*, some white patches of different flowers, and also a few blues, were interspersed with the Scarlet Geraniums. Two of the fountain-basins, one in the middle division of each half of the garden, were each surrounded by sixteen marble vases entirely of *Tom Thumb*. All the vases here, and along the balustrade walls, being about, or a little over, three feet in diameter, and all the plants in all the vases were in the utmost health. Thus it will be seen, that the common practice of using such plants as trail over the sides of vases and baskets is not countenanced by Sir Joseph Paxton, for nothing of the sort is attempted in all the garden, except in two or four vases, I forget which, that stand round the fountains inside the Palace, and the blue *Lobelia gracilis* is there as edging to *Tom Thumb* Geraniums, and I never saw a *Lobelia* edging so perfect out-of-doors. At Shrubland Park, during my reign, no edging was over used to any of the vases along the terraces, they were nearly on the same plan as at the Crystal Palace; the only difference was in favour of Shrubland, common mixtures being entirely repudiated there; but there were as many kinds of plants for vases as are seen in the whole of the Italian Garden at Sydenham; but every vase had a distinct kind to itself, duplicate vases, or duplicate set of vases, being always planted with the same kind of plant. The vases on the terrace at Newnham Courtney, near Oxford, were filled as at Shrubland Park, when I was there in 1852. However, I never saw mixed planting in vases so well managed as at the Crystal Palace, the secret being in giving the same tint, or rather tone, to the whole lot of them all the way round, and that tone is from a small proportion of yellow and white to one whole ground-colour of intense scarlet. No one who does not thoroughly

understand how to make a French nosegay can ever plant a vase in a geometric garden with various plants, except as mere chance work.

Although trailers are not used for the vases at the Crystal Palace, and although I did not use them at Shrubland Park, I have no fault to find with them, and I like to see them, if they are properly introduced, which is a rare occurrence indeed to see. I never could manage them to my own mind; and I appeal to any lady of cultivated taste, who has visited the Crystal Palace, if the *sameness* which is produced by the plant vases there is not tiresome to the last degree. After all, and after considering the subject in every point of view, I would prefer a different style altogether—a single kind of plant to every vase, and three distinct colours in the whole—scarlet, yellow, and bright pink. The situation is too high for Petunias in vases, else one might get a good bright, reddish-purple from them, which would be an improvement. Of Petunias they use only four kinds: two reddish-purples, the *White Shrubland*,* and the *Shrubland Rose*. Our friends, who could not hear of it last spring, may see this Petunia at the Crystal Palace for years to come. They are rather rich in *Verbenas*, dark, and other shades of purple ones, greys, pinks, crimsons, and scarlets, but not always the best kind of a tint; that will come by-and-by, however. *Pluto*, a large brown, and *Lord of the Isles*, a small brown, are there only dark Calceolarias. I could never bear the sight of any small brown or small dark Calceolarias in a bed or pot. I would have drowned this *Lord of the Isles* before he reached the mainland, at any rate.

Two pairs of circular match neutral beds of very dwarf Rhododendrons, *Myrtifolia* and *Wilsonii*, and each bed about twenty feet in diameter, were as regular, as to height and compactness, as a bed of *Nemophilla*; these are double-edged with *Calceolaria Integrifolia* and the variegated *Alyssum*; but there is an edging of *Gaultheria procumbens* coming on; these stand on either side of the grand central fountain, and I would recommend a particular notice of them: the two Rhododendrons could be introduced to match Verbena beds, they are so low and so regular.

The shape of the centre division of the terrace-garden is nearly a crescent, and the grand centre walk cuts it in the middle; in this part, therefore, corresponding beds fall in right and left of the grand walk; these beds are circular, twenty feet across, and all of them are edged with *Tom Thumbs*, from four to six feet deep, and within them are the different bedding-plants,—one kind, of course, making the centre of the large circles; here are *Salvia patens*, *Ageratums*, different *Heliotropes*, *Petunias*, *Verbenas*, and others; between the circles come a row of *Araucaria imbricata*, fine, large plants, which are supported by slender twine made of copper-wire; first of all a soft loose collar is put round the stem of the tree, a yard or so from the ground, and to this collar the wire-twine is tied at three equal distances all round, and the lower ends are fastened to pegs out of sight in the grass, or bed: if the tree is anyways crooked, more collars than one are used, and more twine to get the tree on the perpendicular; this is by far the best way of fastening any tree or standard, and we recommended it in one of our early columns for standard Roses and the like.

There are straight *edgings of Heaths* to Rhododendron and Azalea-beds in several parts of the ground worth imitating; they are as regular in outline as so much dwarf Box; the early spring-flowering Heath, *Herbacea*, is one of them, and it must be inconceivably gay next spring when in full bloom: to keep it so neat it ought to be fresh transplanted every other year. Two varieties of *Fragrans*, *Alba* and *Rubra*, are the other Heaths; but *Stricta* would answer better, and *Vulgaris aurea* would

be rich, in or out of bloom; while *Tetralix rubra* would vie with *Herbacea* in prim habit. The four varieties of *Cinerea* would carry the bell all through August, if not later. Let us hope that this system of edging American beds will come into universal use at once.

D. BEATON.

(To be continued.)

FESTOONING, AND OTHER TRAINING STRONG-GROWING GREENHOUSE CLIMBERS.

I HAVE seen masses and festoons of Clematis and Honeysuckle by the wayside, so thoroughly lovely in their wild, playful arrangement, that our greatest art in cultivating and training could hardly hope to imitate them in beauty and gracefulness. The Canary plant (*Tropæolum canariense*), is a deserved favourite with all classes; enriching the lady's arbour, and enlivening the porch of the working man's door; but in all the positions in which I have ever seen it carefully nursed and trained, in whatever form that training might be directed to assume, I have never, in all the circumstances in which I have noticed it so carefully tended, beheld it evince anything of the gracefulness which it generally exhibits when it sows itself and grows untended, clambering and spreading over some contiguous shrub or low tree, and hence massing, and suspending, in all directions, its many shoots, covered with its many golden blossoms. I have, generally, almost every season, had one or more large Rose trees getting all the worse for wear, and it so happens, that this annual has been allowed to take quiet possession of the head, and in such and other suitable places, I have never been able to produce an effect, with cultivation and care, equal to what the plant will do when just let alone, after, perhaps, a few primary ties and twists in the way of first teachings. Another thing I have long noticed in this plant, and worthy of a passing allusion, is, that the less you interfere with it, the less it is liable to those mildewings and sudden goings off with which it often troubles its admirers who cannot be persuaded to let well alone.

Recognising, to the full extent, that art and design should ever be seen in gardening; that, in fact, however wild, romantic, and tangled a scene may be made by the genius of man, that yet there is something either imperfect, or altogether superfluous and nugatory in his workmanship—if it should at once be taken for a *natural* scene, and no impress of man's doings were perceptible—yet it cannot be doubted, that in many cases, such as those with which I have headed this article, it would really be worthy of trying whether we might *not* wholly conceal art and design, *but* so keep it in the background, that the first impression would conjure up something like a proof of the old adage, that "Nature, when unadorned, is adorned the most."

Much of the interest that would otherwise be associated with various coloured Passion-flowers, Tacsonias, &c., in a moderately lofty greenhouse, is next to lost, from the trim, artistic manner in which they are fastened to wire and rafter, and flowers presenting themselves there at times merely on the points of the shoots. Just allow a fact which has long been patent to me—that, of all Passion-flowers, from the glories of a *Quadran-gularis*, to the less gorgeous beauties of a *Cerulea*, the real flowers of creation can never see, examine, or handle too much of them; and then compare, for a moment, the neat trimness of a house where every creeper is next to kept to its rafter, during the hot days of summer and autumn,—contrasted with the delightful coolness and shade in such a house where the flowering shoots are allowed to dangle at will, and the still more

* The *White Shrubland* Petunia is here called *Royal White*; probably they had it from the Royal Gardens, Kew.

delightful looks and pleasant smiles from pretty faces, as the branches of Passion-flowers and Tacsonias rattle on bonnets, and play caressingly on fair cheeks, as their owners traverse the paths; and the still more volume-speaking looks, when, if you have only a little gallantry within you, there is a nervous twitching at the end of your knife, that will not be quiet until you have severed one of these long flaunting streamers, and told the fair receiver how she may manage to open the many small unopened flower-buds in her own flower-glass at home; and I have no doubt of the decision you would come to.

In a low house, where a dense mass of bloom is deemed requisite on the stage all the summer and autumn, such dangling creepers would require to be few; but in lofty houses it is very different; and the gratification of this natural and graceful habit may be indulged so far as not to interfere injuriously with the plants beneath them. In such a house, where few things of importance are kept in-doors in autumn but *Fuchsias*, *Clerodendrons*, &c., where the height of the front is nearly twelve feet, and nine feet of that, at least, glass, I have found such streamers not only interesting, when dangling over the pathways, but very useful in summer, as a beautiful shade, when hanging down thinly over the whole of the front of the glass inside: Amongst others, I found *Ipomœa Learii*, and the *Passifloras*, and *Tacsonias*, were as useful as any for this purpose; and I group them together, because, as they produce their flowers plentifully on the young shoots of the current year, one system of management suits them all; namely, thinning-out, and cutting back several times during the summer, so as to have a succession of bloom, and pruning back pretty well in autumn, alike to admit more light into the house, and ripen the shoots to be cut rather close in, in winter and spring. It being necessary to admit more light into the house, I have been obliged greatly to thin these long streaming shoots already, and, among others, was obliged to cut away many long shoots of *Tacsonia mollissima*, loaded with bloom buds. This plant is by no means new, and yet has created some interest this season, from not having been seen in this neighbourhood previously, and its rather singular appearance; its pretty blossom, pinkish inside and greenish without, being slightly cupped round the passion wort-like fructification, just as the neck and ears of a fashionable beauty were protected by the stiff frills in the days of queen Bess; while the whole is supported by an elegant green tube, something more than four inches in length.

A short description of the rough mode of managing this *Tacsonia* will give the uninitiated an idea how to treat the whole of the *Passifloras*, and all other creepers that, like the Vine, bloom only on the wood of this year, proceeding from well-ripened buds on wood or spores of the previous year. Between three and four years ago, I saw a very strong plant of this *Tacsonia* with huge leaves and but few flowers, though covering a large space. On getting home late, I forgot all about it; but by-and-by, a poor cutting, half mummy-dried, was found in the crown of my hat, that general "*Rob Morrison's bonnet*" receptacle, ever ready, and a good place too, for the visiting gardener to store any little tit-bit in.

Now, great truths often drop from great geniuses quite incidentally, and being somewhat little in that way, I may be allowed to hint at a little truth as respects cutting-getting and cutting-giving. March into a garden, with something of the old paraphernalia style of a nice japanned tin case for specimens and cuttings slung under your arm, and, unless there are peculiar reasons to the contrary, I should like to see you count the tenants that rattle in your beautiful case as you march onwards. There is something of what Sam Slick would call *natur* in the whole affair. Your showy apparatus,

it matters not what, conjures up something of—"the fellow would carry the garden on his back"—and you are met with a coldness and an icy chilliness that a very hint about a cutting sticks in your throat, quite hopeless of utterance. But march free and unincumbered, with a hail, good-morrow sort of air, look at beautiful objects with the admiration they deserve, but without showing the least of a cloven hoof of acquisitiveness, and ere long, you will find yourself so much one in heart and one in mind in deploring misfortunes and admiring beauties, that something like a mesmeric stream of sweetest sympathy will pass from heart to heart, and with scarcely such a thing as a look of a hint on your part, your friend will be so itching to present you with a cutting from his favourite bed, that it would be bad manners to deny him the gratification of his generosity. It is the same all the world over. If you are not above wanting anything, and I would not for a moment wish to be, your so-called respectability depends upon seeming to be so. Poor empty mouth will long wait before it is filled. Where, as a general principle, do the vast mass of *present* packages go to at open-hearted seasons? To the most destitute? Nay, to those who comparatively neither need nor care for them.

Some young blue-aproner may find the benefit of this wandering episode. The neglected cutting was laid down in a damp place, and by frequent gentle dewings, in a day or two it became plump again. In such circumstances, never stick your cuttings into water. Placed in a cool hotbed in a pot, it soon rooted, and next season it was put into a large pot, the hole in the bottom made a little larger, and then the pot was half plunged close to the front wall, inside of a greenhouse. A shoot soon reached the top; by bending it there it soon formed two, and one was taken, right and left, along the top of the front of the house. While these shoots were growing, all buds on the main stem were nipped out, that the strength might be directed into the side-shoots above. These were stopped, last year, in October, which made the shoots ripen and firm. In spring, these were looked over, and many of the buds thinned out, it being intended to let a shoot hang downward from every bud left. Many of these shoots, dangling without any support whatever, have been from six to twelve feet in length. In general, there were no flower-buds for the first two feet or so of the shoot, but mostly downward, or along the shoot, every joint added in length, just as in the case of the hardier Passion-flower has the flower-bud in embryo. One cause that hastened the thinning mentioned above was, that many of these shoots would fork out, and produce several flower-bearing shoots, and thus threaten us with a thicket, instead of a pleasant flowery shade. Passion-flowers are managed the same way, only, from the leaves being smaller, they require even less thinning. The glory of such creepers, in such a house, is generally seen in July and August; after that time more light is wanted for the plants, and during winter the greatest part must be cut back, to allow all the light possible, leaving only a few comparatively short to prevent a tame, bald outline. If spurred back, then the young shoots will again want regulating and thinning, as they break freely from the advancing heat of the spring. Once established, there is no comparison, in point of time, labour, and gracefulness, in using such climbers in this manner, and tying them stiffly to wires, rafters, or arches.

Many have asked me, if they could not grow such rampant Creepers easily in pots, and train them round trellises, so as to grow them, and such flowers, near the eye, where they had no means of growing them on lofty roofs. Yes, but not so very easily. It is an error to suppose that in this case the mere poverty occasioned by pot-growing will give you plenty of flowers, as the

young shoots require to be moderately strong to have an average of flowers. The great error is, having a large mass of shoots all struggling and striving with each other. Keep in mind, that most of these plants grow a little distance before they show bloom. The great safeguard from disappointment, is to keep this in view, and to look upon the old plants in spring, fastened to the trellis, as a mere ground-work, or skeleton; and when it grows and breaks its buds, to go over the whole and rub off all except the most promising, and those you have any hopes of finding room for. When the flowering is in process, but not before, manure waterings will be necessary to keep the shoots growing, and thus producing fresh flower-buds. On the same plan, I have several times had fine specimens of *Ipomea Learii* in pots. Neglect this thinning, so as to secure room and strength for middle-sized shoots, and you will have a thicket of twiggy shoots and but few flowers. If the base of these shoots left are well ripened by pruning back in winter, there will always be a good supply the following year. R. FISH.

YOUNG GARDENERS.

By observations that I have made, for many years, I have noted, that just in proportion as a young man strives to improve himself in the profession of Gardening (combined with a steady, moral conduct), is his success in obtaining and keeping a good place. It is quite true, that skill in the business is indispensable; but if that knowledge is not attended, or combined, with diligence, sobriety, honesty, and a firmly honest character, the knowledge, however profound, is useless.

The position of a gardener is high: he has not only to manage the garden, but, in most situations, to converse with his employers, however high in the scale of society they may rank. Hence, a good address, with a knowledge of proper language, and the courtesies of society, are nearly as desirable as a knowledge of plants, and how to grow them. As I know that the pages of *THE COTTAGE GARDENER* are read (and, I hope, studied to a good purpose) by many under-gardeners, I trust a few brief remarks and advice from one who has seen and felt the evils of want of steady, straight-forward conduct, will be received with good feeling, and lead them to strive to acquire every part of a good gardener's character, and thus render themselves valuable to their employers, and an ornament to the profession.

And in order to stimulate my young friends, I would point out living examples that have raised themselves to the highest point of excellence as gardeners,—examples that will be brought before them, from time to time, in *THE COTTAGE GARDENER*; men, who, in their earliest days of gardening, were, like themselves, under-gardeners, with small wages, and with much fewer sources of information than are within present reach. I would point out Sir Joseph Paxton, at Chatsworth; Mr. Ingram, at the Royal Gardens; Mr. Fleming, at Trentham; Mr. Barnes, at Bicton; Mr. Spencer, at Bowood; Mr. Aiton, at Enville; Mr. Toward, at Osborne House; Mr. McIntosh, at Dalkeith; Mr. Collison, at Eaton Hall; Mr. Forbes, at Woburn; Mr. Marnock, at the Regent's Park; and, I may add, the contributors to this work, Messrs. Beaton, Fish, and Errington; and many others about the same age; besides a younger generation that are advancing up to the point of excellence. All these men once were at the lowest step of gardening, and each young, steady, perseveringly-patient man may reasonably hope for success similar to that of his predecessors, providing he treads in their steps. To enable him to do so, I will lay before him certain rules that he must follow; and,

as there is nothing like order in all things, I will divide the subject into the following heads, or sections:—

1. Personal appearance. 2. Division of time. 3. Method of doing work. 4. Visiting gardens. And 5. Concluding remarks.

1. PERSONAL APPEARANCE.—This may appear of little consequence; but he who neglects taking care of himself, usually will not take care of anything committed to his charge. Every young man should keep his skin clean at all times; his hair neatly cut; his clothes brushed; his shoes or boots brushed and well oiled, or greased; and these ought to be attended to every day. No gentleman or lady can take any pleasure in talking with, or employing about them, a young man whose face and hands are unwashed, whose hair is rough and unbrushed, and whose clothes and shoes are ragged and daubed with soil or dirt. This cleanly habit is what a young lad should first of all acquire, and afterwards practice and persevere in. In the evening, the first thing he should do is to clean his shoes and brush his clothes, then wash his skin, brush his hair, and make himself tidy. Then, in the morning, rise a few minutes before the time for study, wash again, &c.; and then his mind will be easy, and he can look any one in the face, with the modest assurance that there is nothing in his appearance that will displease.

With regard to the kind of dress he should use, I would advise it to be of such stuff as would wear well and look neat; I would by no means advise a gay, expensive dress, even for the Sabbath-day. That is a rock upon which many young men have split, and have become self-conceited and dandified, giving almost as much disgust to their superiors as a dirty sloven would do. The happy medium is what I would recommend; and a young man would act wisely if he consulted some older man as to the kind of dress he ought to wear. No young gardener ought to be without the blue apron, it is so useful to contain various articles, and, besides, keeps the loins warm in winter, and thus often prevents rheumatism. I would recommend the possession of a good, plain, silver watch; and this for its use, and not for show. In winter, when the young man has to rise to look to his fires, his watch, with the aid of a lucifer-match, will inform him of the hour. I remember well, when the fires were first committed to my charge, I had no watch, and was so anxious for fear of laying too long, that I got up frequently by three or four o'clock, when six would have done quite as well.

Mr. Loudon, in his "Encyclopedia of Gardening," gives the following remarks on gloves:—"Never perform any operation without gloves on your hands, that you can do with gloves on; even weeding is far more effectually and expeditiously done by gloves, the fore-fingers and thumbs of which terminate in wedge-like thimbles of steel, kept sharp." To a certain extent, this direction is good; but the too great use of gloves tenders the hands, and renders the operations—such as nailing, for instance, where gloves cannot, of necessity, be worn—very painful to perform. For such operations as pruning Gooseberry-bushes, &c., or for wheeling earth or dung on a frosty morning, gloves are exceedingly useful and proper. And his concluding observations on this subject are exceedingly correct and to the point:—"Remember, that you are paid and maintained by, and for the use of, your employer, who may no more wish to see a dirty, ragged, uncouth-looking, grinning, conceited fellow in his garden, than a starved, haggard, untutored horse in his stable." Lastly, in behaviour, let every young gardener study to be respectful to all above him, and friendly and civil to his fellow-workmen; and let this golden rule of our Saviour always be his rule in every act of life:—"Do unto all men as you would they should do unto you."

2. DIVISION OF TIME.—I am much concerned to find,

now-a-days, that the generality of young men imagine that they can learn the science and art of gardening during work hours only. As soon as the day's work is done they dress and go out into company, and waste the precious hours at least idly (if not worse), which ought to be devoted to study and improvement. This is a great mistake. No young gardener ever can attain the eminence the worthies mentioned above have achieved, who thus wastes the precious hours of youth in dissipation and folly. Gardening is a science that must be studied with all the powers of the mind, and the period for that study is from the first entrance into the garden, till a sufficient knowledge of gardening is obtained to render the student master of his business in all its branches. This is no easy task; and to acquire it, a division, or portion, of time must be set apart, and most perseveringly adhered to.

I suppose the youth to have received at school some knowledge of reading, writing, and common arithmetic, and, perhaps, a slight acquaintance with grammar. These are a good foundation to work upon, provided he resolves to improve them, and acquire other branches of knowledge by his own industry. The grand source of all learning is books; but to make them beneficial they must be read and studied. Botanical and horticultural works will, of course, form a large portion of his reading. The division of time for improvement will be, one night in the week for reading; one for drawing; one for arithmetic, geometry, and land surveying; one for studying botany, chemistry; and one for preparing an herbarium of plants and a collection of insects; and the last for studying a foreign language. On each of these heads I will dilate more fully in my next.

T. APPLEBY.

(To be continued.)

WOODS AND FORESTS.

THE ASH.

HAVING written several papers on the culture of the Oak, and having, as I think, pretty fairly exhausted the subject, I now beg leave to introduce our next best native timber, THE ASH, for consideration.

The Ash is a tree that, in favourable situations, rises to the height of from seventy to eighty feet. If majesty is the characteristic of the Oak, I may claim for the Ash elegance as its character. The stem is generally straighter and slenderer than the Oak; the bark is of a silvery-grey hue, and the foliage is pinnate; a term our Fern readers will well understand. The colour of the leaves is a lighter green than its majestic compeer, though more tender. It has been remarked, that the Ash, of all our native trees, comes last into leaf, and falls the first in the autumn. Often has the idea struck me very forcibly, that the Oak resembles a sturdy, strong, powerful man, and the Ash a slender, elastic, graceful woman; the one, bold, uncompromising, braving the early and latter storm; the other, modest, retiring, and delicate, fearful of the frosts of spring, and nipping cold of the autumn blast. I know this is but a fanciful idea, yet I think it has some truth in it; at least, it always pleased me in meditating on the different habits of the denizens of the forest.

The Ash, like the Oak, will not thrive well on a high elevation. Indeed, the timber, in such situations, small though it be, is not by any means so valuable even in proportion to its size. In such a situation the wood is brittle; just the opposite quality for which the Ash is used and valued. The best Ash timber is valued in proportion to its toughness, being used for carriage shafts, where that quality is indispensable. This being so, it follows, as a matter of course, that the proper

situation for this tree is one that is neither too low, (for it will not thrive in wet boggy land), nor yet too high, where it cannot grow quickly. The soil it thrives best in is of a deep loamy nature, such as we often find in dry valleys; such soil is formed by the continual washing down by heavy rains from the mountain side. In such a soil and situation the Ash will thrive, and sooner make a timber tree even than the Oak. If Ash timber was as high in price as Oak, it would be the more profitable tree to plant, because of its more rapid growth, and that quick growth, instead of rendering it softer in grain, and more rapid in decaying, adds to its value, because it is more elastic and tough; the two things that the Ash is valued for.

It should always be planted in masses, and never in hedgerows, because its roots run on the surface, and impoverish all vegetation as far as they reach. I have heard farmers say, that the worst tree in their hedges is the Ash, for nothing will grow under its shade. As this tree has numerous fibrous roots, it may be planted when of a considerable size; but I think the most profitable size is from two to three feet; smaller trees are liable to be choked with weeds, brambles, &c., and larger ones are so much longer in recovering the removal, that there is nothing gained by their extra height at the time of planting.

The ground should always be duly prepared previous to planting. If it is wet it should be deep-drained. I recommended, in the Oak plantation, that the drains should be open ones, because the roots of the trees soon choke up covered drains. If that be true of the Oak, it is still more so in the case of the Ash, because the roots of the latter tree are more numerous and spreading. I lay much stress upon the necessity of draining for the Ash as well as the Oak; for I have seen them, in the course of my planting experience, planted in wet land, and in seven years they had not grown as many inches. Such a wood fell once under my management; I had deep drains cut and left open, and the year following the Ashes grew a foot or more, and the year after from two to three feet, and, as the saying is, they never looked behind them. If there are two feet of dry soil before water is found, then draining is unnecessary.

Wherever it is possible, I strongly recommend the ground to be trenched, or, at least, deeply dug the summer before the planting is done. The trees grow then right away, and at least two years are gained by the loosening and cleaning process of trenching, or digging, thus amply covering the expense.

The best season for planting is immediately after the first frosts have caused the leaves to fall, which generally happens towards the middle of November; and, as I remarked above, the Ash has many fibrous roots, in planting them, the roots should be spread well out on every side; hence, the holes should be opened wide to receive them, wide enough to allow every root to be spread out to the fullest extent. They should then be covered in about two or three inches deep, and the finer parts of the soil thrown upon them and firmly trodden down. For the size I recommend (two to three feet), there is no necessity for stakes, if they are properly planted and well trodden in. With regard to the distance between each tree, four feet should be allowed every way. If the plantation is a large one, and no objection to a regular plan, I would plant the trees in rows; and then, in order to cover the expense of draining, cost of trees, and planting, a crop of some kind or other might be, without any damage to the trees, planted, or sown, between the rows. The hoeing and cleaning of this crop would greatly benefit the trees: perhaps the best vegetable to grow between them would be Potatoes, and the next Mangold Wurtzel. I have, at this moment, the latter vegetable growing between rows of trees, and I find it does no injury to them, but, on the contrary,

is beneficial, for the leaves shade the ground from the sun, keep down the weeds, and, as I allow the leaves to rot upon the ground, it is increased, and thus feeds the roots of the trees. So good is the crop, that I fully calculate it is worth, at least, ten pounds an acre, or very likely one-third more than that. I do believe, two annual crops of vegetables might be taken off woods so planted, and then all the expenses would be more than covered.

The trees ought to be carefully gone over during the first summer, and all branches that are likely to injure the leading shoot either shortened-in, or cut clean off at once. This I must leave to the judgment of the forester who has the charge of them.

T. APPLEBY.

(To be continued.)

SEASONABLE WORKS—DEEP CULTIVATION—GRAVELLY SOILS.

It is very likely that before this paper reaches the readers of THE COTTAGE GARDENER the fine weather we have so long enjoyed this autumn may have changed, but if not, it would be advisable for the amateur and others to make the most use of it, in pushing on any alterations or extraordinary work that may be wanted; for, independent of the advantage of getting on with the winter work, there are many things much better done now than at a later period, consequently, no time must be lost in hastening on such work.

In the *kitchen-garden* all vacant ground may either be dug or trenched, and all rubbishy crops cleared away, and all work connected with the altering or making of walks or roads proceeded with. Dung and other manures may be got on prior to digging, and many other jobs forwarded in such a way as to leave nothing to be done hereafter that can be done now. Weeds need not be mentioned, as it is expected advantage was taken of the fine weather to eradicate them as they appeared; and, assuredly, there never was a more favourable season for so doing; for, independent of the fine autumn, there was a fine spring likewise, and it is to be hoped, that the weeds will have got such a dressing this season as will prevent their showing themselves in any numbers another year. However, as there may yet be some places where a thorough clearing out will be of advantage, a fine, dry autumn forms the best opportunity for that work as well as many others.

This, also, is an excellent time to see about the planting of *fruit and other trees*. *Evergreens* cannot possibly be planted too soon after the middle of September, and the few leaves now remaining on deciduous ones will not be any detriment to them, as their functions will be about over for the season; but, if any doubt exist in that way, the process might be delayed for a time, only let the holes be prepared for their reception, and all other preliminary work done. But it must be only on the very coldest soils that the leaves of deciduous trees have any useful purpose to perform now; and even then, it is questionable whether ripening would not be accelerated rather than hindered by the change; while the trees that do remain, but which it is intended to replenish with a quantity of fresh material, cannot possibly be done at a better time than the present, when wheelbarrow and carting work can be so advantageously accomplished. Amongst other multifarious duties which may be most effectually accomplished in dry weather, that of altering or amending *turf*, is not, perhaps, the best done at this time; but when any amount of earth-work is to move, it cannot possibly be done at a better time than when dry; and as there is no danger of its continuing so dry now as to prevent the *turf* growing, it need not be deferred on that account; while the advantage of making use of existing

walks, and other grass plots adjoining, is too obvious to require mentioning here. Suffice it to say, that there are few, perhaps no out-door operations, which are not better done in dry weather than in wet, at this season of the year.

Recurring again to the vacant quarters of the kitchen-garden, it would be worth while enquiring when such were last *trenched*, and see if they cannot now be done with every prospect of success. In a general way, vegetables cannot have too deep a soil, provided it be good. Trees, especially fruit-trees, may, in many instances, be the better by the downward tendency of their roots being checked by a substratum less congenial to their wants; but in general, all vegetables delight in a deep soil, and many will not thrive well unless they be furnished with such an one. It is, therefore, advisable, now and then, to trench over the quarters of the kitchen-garden, so as to accommodate them in that way, generally speaking, after the ground has been trenched,—say two feet deep; the subsequent diggings seldom go lower than twelve inches, and often not so much, consequently, the under portion becomes hard again, and if not completely impenetrable to roots, at least so much so as to be no ways inviting to them, and, consequently, useless. The present is the best possible time to effect a deep stirring of the soil; but as different soils require a difference in their treatment, it would be as well to consider that matter first, and give to each the attention its case requires.

It is almost needless to say, that light lands on a hungry gravel, or something approaching to that, are the worst to withstand a continued drought; for, independent of the drain caused by the growing plant, the substratum also sucks a considerable portion of moisture as well, instead of furnishing any to the advantage of the plant. Now, in such a soil, neither moisture nor sustenance can well be spared—consequently, it is of consequence to husband what is there, as well as to furnish what more can be got; and, in doing so, recourse must be had to trenching.

A similar course is also necessary, now and then, on stiff lands, but from a widely different cause. But, as this will probably be made the subject of another chapter, I will proceed at once with the treatment best calculated to make a light, hungry soil more productive than it had previously been.

It is a common remark, that a light, gravelly soil requires fresh manuring each crop; for what the last one has not exhausted is supposed to have been washed down through into the inert mass below. Now, in order to bring this stubborn subsoil into play, it is necessary to break it up, and instead of bringing it to the top at trenching time, to be content with allowing it to remain at the bottom still; at the same time, anything may be added to it that is not exactly diametrically opposed to it in construction, such, for instance, as mixing peat-earth with one containing lime, or chalk, to excess, for the two agents being opposed to each other, devour each other when they come in contact, without forming a compound at all of any use; however, as it would be useless adding peat to gravel, I may add, that clay might advantageously be so used, and would recommend it to be done rather largely.

The routine of the work is this: After removing the top spit, which it is supposed is all the best of the soil, the bottom portion might be dug deeply with forks where it is, digging in at the same time any required quantity of clay, or other stiffening matter, as, for instance, pond-mud, or, in fact, anything, save some of itself again. This digging, or packing up, to be effectually done, in order to allow the plants which the ground may be cropped with an opportunity of rooting into this substratum, and if a little good earth, or other enticing matter, did now and then get amongst it, so much the

better, as it would encourage the downward tendency of roots, and when once there, they would, possibly, be induced to remain there, and, what is equally important, benefit by their being so, because, being so much more deeply-rooted in the ground, they are not so likely to suffer from any continued dry weather as they would do if confined to the top; and although much may be said against fruit-trees and other things rooting into an ungenial soil, yet it is seldom that they take harm by rooting into one of a dry nature; in fact, they are often driven there by being denied sufficient nourishment nearer the surface; and, consequently, their want of vigour, or even of health, is more owing to the want of food than through being supplied with that of an improper kind. Now, in order to remedy this state of things, deeper cultivation, as alluded to above, must be attained; and this can only be accomplished by breaking up the hard and all but impenetrable bottom in such a way as to admit the roots of trees, &c., descending lower for support; and it is surprising how deep certain trees will send their roots even in soils that have not been disturbed, only the substratum must be considered congenial to them.

Having occasion, some little time ago, to excavate some ground where the common Laurel and some few small deciduous trees were growing, there were roots in an active state quite three feet below the surface, and that in hard, stony ground; only, be it remembered, the stone was probably the principal inducement for their descending so low, for the finer matter seemed anything but inviting, and the roots clung to the stone with a tenacity that showed it possessed a something that they relished. Stones, of course, are an essential portion of most compounds, and where they exist in great abundance, much harm would be done by taking any great quantity away. This has been severely felt in some neighbourhoods where the fields have been stripped to furnish road-stones: great deterioration is the consequence, for even a hard flint stone on a ploughed field has its duties to fulfil; and though, to a cursory observer, the field might appear to be better without it, yet such is not the case. It is, therefore, incumbent on the cultivator of the garden to act very carefully in what he removes; and the safest rule would be to add as much as possible and abstract as little, for even weeds, and decayed, or half-decayed substances of any kind might be very beneficially dug into the ground, especially into the subsoil, taking care not to allow any perennial weeds to lie so near the surface as to render their growing likely. Things in a decaying condition can do no harm, but the treatment proper for a living one being somewhat different, I will return to that next week.

J. ROBSON.

MANURING FOR IMMEDIATE USE.

IN Mr. Errington's recent article on "Manures, their Use and Abuse," he is perfectly correct in stating, that it is not always necessary to manure for our posterity, or for our expectant successors. I know an instance where a working man rented a small piece of garden-land, under conditions that he should quit, on a short notice, if it was wanted for building purposes. His plan was to clean the land well, and to keep it free from weeds, and to burn all the rubbish he could collect or beg, and to preserve the ashes. It was situated near a stable, and some pigstyes, and brewhouse sinks, the sock and soap-suds from which, he turned down a sough into a hole, which he had puddled round with clay, and made tolerably watertight without much expense. Into this tank he put his burnt ashes, and also saw-dust collected from an adjacent timber-yard and saw-pit, and now and then some soot, and the sweepings of a blacksmith's shop, and the like. Having steeped this mixture for some weeks in the liquids, he mixed it before use with a little sand,

to render it dry and friable; and then he sowed it in shallow drills or furrows, with a long, narrow box made of two rough boards, nailed together, about six inches wide, and three feet long, with a little iron latticing nailed at the bottom; in fact, an elongated riddle, the width of the drill or furrow; and immediately upon this manuring he laid his seeds and plants. By this means he insured a fair start for his little crops, and they thrived admirably; and I think better than if the land had been saturated and rendered more rank by stronger and deeper placed manures.

The working man of whom I speak, with his little garden, practised the very thing that Mr. Errington most valuably suggests to the extensive readers of THE COTTAGE GARDENER. —A WORCESTERSHIRE MAN.

THE DORSETSHIRE POULTRY IMPROVEMENT ASSOCIATION.

THIS Exhibition was held on the 27th and 28th of September, and proved a very interesting and well-conducted one, but when we state the immediate arrangements were made under the experienced and *practical* eye of the Mayor of Dorchester, George Andrews, Esq., the honorary secretary, it alone is a sufficient guarantee for the regularity and completeness of every portion of the appointments. The show was held in the Market Hall, and, from the arrangement of the competing pens, the same amount of light and comfort were equally enjoyed by all the specimens; and though this feature is generally but too little considered, it is a plan that alone not unfrequently tends, in no slight degree, to the fairness and justice of decision in the prizes. It will be seen, by reference to the prize list (which we append), that several valuable pieces of plate were here awarded, being the gifts of surrounding gentry; a feature very highly calculated both to increase the competition and likewise the interest of the public generally in the Exhibition. But we cannot help here suggesting what to us appears in this department a most manifest improvement, for (as published) these prizes were to be given to two *different varieties* of poultry exhibited by each competitor; therefore, the almost universal result was, that the two pens, taken conjointly, proved one that was most excellent, and the other as far removed from superiority; we therefore suggest, that it is decidedly best to allow every class to compete *separately*; such plan, if pursued, tending, undoubtedly, to the perfect fairness and easy justification of the awards; whereas, if *various* varieties contest for the *same* premium, the difficulties ever attendant on such decisions will be infinitely increased. The *Cochins* were good, but not equal to those of most of the former Dorset exhibitions (and for which the county has been generally reputed), consequently, several prizes were withheld. The *Dorkings*, contrariwise, were most excellent, those of Mr. Robt. Loder, of Crawley, Sussex (Pen 88), both as to general character and colour, have rarely been excelled (their colour being a beautiful light grey), and the matching of the birds perfection. The judges very highly extolled the whole class of this variety, and, no doubt, they were the most perfect in the whole Exhibition. The *Spanish* were good, but sadly moulting; no variety exhibiting to loss advantage when out of plumage. In the *Game* classes (as usual), many most excellent pens lost every chance of success from want of attention in the selection of the birds competing; white, willow, green, and yellow legs, all being placed *haphazard together* in the same pen; a failing we have again and again energetically pointed out as certain to produce failure of success. The *Hamburghs* were very good throughout the whole classes; the white ear-lobe in the Pencilled varieties being more perfect than is generally *now* found to be the case; and the two prize Golden-pencilled pens were not a little calculated to raise this variety in public estimation; they were very distinctly pencilled, very clear in the ground-colour, and highly-conditioned birds. The *Polands* were not remarkable for perfection, nor yet for degeneracy, being of a medium character. No Silver-laced Bantams were exhibited, but the Golden-laced variety were very good. The *Geese* and *Aylesbury Ducks* were excellent; the *Rouens* indifferent. The *Turkeys* comprised many fine specimens; in the first-

prize pen was the best *hen* bird we ever saw. During both the days the exhibition was open to the public it was well attended, and the pecuniary results, consequently, very successful.

The Judges were—Mr. H. Hinxman, of Little Dinnford, Salisbury; Mr. E. Hewitt, of Sparkbrook, Birmingham; Mr. John Bailly, of London.

The Prize List and the Awards are as follows :—

A Piece of Plate, value £5, given by the Earl of Ilchester, the Patron of the Society, to the owner, being a resident in the county of Dorset, of the best Cochins-China Cockerel and two Pullets of 1854, and the best Dorking Cockerel and two Pullets of 1854,—to J. J. Farquharson, Esq., of Laughton.

A Piece of Plate, value £2 10s., given by John James Farquharson, Esq., the President of the Society, to the owner, being a resident in the county of Dorset, and the breeder of the best Cinnamon or Buff Cochins-China Cock of not less than one year old,—to Frederick Charles Steggall, Esq., of Weymouth.

A Piece of Plate, value £2 10s., given by J. J. Farquharson, Esq., the President of the Society, to the owner, being a resident of the county of Dorset, and the breeder of the best Dorking Cock of not less than one year old,—to Mr. G. A. Ingram, of Bagber, Milborne.

A Piece of Plate, value £3, given by Sir Edward B. Baker, Bart., the Vice-President of the Society, to the owner of the two best pens of Ducks (Aylesbury and Rouen), each pen to contain a Drake and two Ducks only,—to Mr. Richard Genge, of Waterson. Mrs. H. Fookes's, of Whitechurch, were highly commended.

A Piece of Plate, value £5, given by the Lord Rivers, to the owner of the best Cinnamon or Buff Cochins-China Cock and two Hens, above one year old,—to Mr. James Crane, jun., of Tolpuddle. Those exhibited by Mr. F. C. Steggall, and Mr. Joseph Goodenough, were highly commended.

A Piece of Plate, value £5, given by H. K. Seymer, Esq., M.P., to the owner of the best Cinnamon or Buff Cochins-China Cockerel and two Pullets of 1854,—to Mr. John Taylor, jun., of Spring Grove, Hounslow. Those exhibited by Mr. P. Jones, and Mr. F. C. Henning, of Dorchester, were highly commended.

A Piece of Plate, value £2 10s., given by R. B. Sheridan, Esq., M.P., to the owner of the Spanish Cockerel and two Hens, above one year old,—to Mr. W. Plummer, of Brislington, near Bristol.

A Piece of Plate, value £2 10s., given by R. B. Sheridan, Esq., M.P., to the owner of the best Spanish Cockerel and two Pullets of 1854,—to Mr. W. Plummer. Mr. J. G. Ramsden's, of Twickenham, highly commended.

A Piece of Plate, value £5, given by Gerard Sturt, Esq., M.P., to the owner of the best Dorking Cockerel and two Pullets of 1854,—to Mr. Robert Loder, of Crawley, Sussex. Those exhibited by Mr. F. C. Henning, of Dorchester, highly commended; by Mr. W. L. Henning, commended.—The Dorkings, generally, declared by the judges to be a meritorious class.

Class 1.—SPANISH.—Birds exceeding one year old.—For the best Cock and two Hens.—First prize, Mr. W. Plummer, Brislington, near Bristol. Second prize, Mr. Edwin Longman, Dorchester.

Class 2.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. W. Plummer. Second prize, Mr. G. J. Ramsden, Twickenham.

Class 3.—DORKING (Coloured).—Birds exceeding one year old.—For the best Cock and two Hens.—First prize, Mr. Robert Fookes, Milton Abbas. Second prize, Mr. Edward Pope, Great Toller.

Class 4.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. Robert Loder, Crawley, Sussex. Second prize, Mr. F. C. Henning. Third prize, Mr. W. L. Henning, Dorchester.

Class 5.—DORKING (White).—Birds exceeding one year old.—For the best Cock and two Hens.—First prize, Mr. W. Fooks, Tarrant Monckton. Second prize, Mrs. Besant, Milborne St. Andrew.

Class 6.—For the best Cockerel and two Pullets, Chicken of 1854.—First prize, Mr. Henry Bone, Avon, near Ringwood. Second prize, Mr. T. Mills, Bisterne. Third prize, Mr. Thomas Randall, jun., Winfrith.

Class 7.—COCHINS-CHINA.—Birds exceeding one year old.—(Buff).—For the best Cock and two Hens.—First prize, Mr. Joseph Goodenough, Godmanstone. Second prize, Mr. F. C. Steggall.

Class 8.—For the best Cockerel and two Pullets of 1854.—First prize, W. J. Taylor, jun. Second prize, Mr. F. C. Henning, Dorchester.

Class 9.—(Brown).—For the best Cock and two Hens.—Premium withheld.

Class 10.—For the best Cockerel and two Pullets of 1854.—Premium withheld.

Class 11.—(Black).—For the best Cock and two Hens.—Premium withheld.

Class 12.—For the best Cockerel and two Pullets of 1854.—First prize, Mrs. Mills.

Class 13.—(White).—For the best Cock and two Hens.—First prize withheld. Second prize, Mrs. Mills.

Class 14.—For the best Cockerel and two Pullets of 1854.—First prize, Mrs. Mills. Second prize withheld. Third prize, Mr. W. Symonds, jun., Milborne.

Class 15.—MALAY.—Birds exceeding one year old.—For the best Cock and two Hens.—First prize, Mr. W. Manfield, jun., Dorchester, for his "Lord Dorchester." Second prize, Mr. W. Manfield, Dorchester, for his "Lord Lilliput."

Class 16.—For the best Cockerel and two Pullets of 1854.—Disqualified.

Class 17.—GAME FOWL.—Black, Black-breasted, and other Reds.—Birds exceeding one year old.—For the best Cock and two Hens.—First prize, Mr. James Crane, jun., Tolpuddle. Second prize, Mr. H. Fisher, Blandford.

Class 18.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. W. Burgess, Winterborne. Second prize, Mr. Martin Small, jun., Barford Farm. Third prize, Mr. W. Burgess.

Class 19.—(Any other colour).—For the best Cock and two Hens.—Prize withheld.

Class 20.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. W. Burgess. Second prize, Mr. John Dominy, Cerne. Third prize, Mr. J. T. Ensor, Dorchester.

Class 21.—GOLDEN-SPANGLED HAMBURG.—Birds exceeding one year old.—For the best Cock and two Hens.—First prize, Mr. Henry Fookes. Second prize, Mrs. Elizabeth S. Bower, Shroton House.

Class 22.—For the best Cockerel and two Pullets of 1854.—First prize, Mrs. H. Fookes. Second prize, Mr. H. F. Fisher, Blandford. Third prize, Mr. H. A. Templar, Bradpole. (This class generally was commended.)

Class 23.—HAMBURG.—Birds exceeding one year old.—(Silver-spangled).—For the best Cock and two Hens.—First prize, Mr. Joseph Symonds, Gorwell, near Dorchester. Second prize, Mr. Charles Edmunds, Brislington.

Class 24.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. Joseph Symonds. Second prize, Mr. W. Symonds, jun. Third prize, Mr. H. F. Fisher. Mrs. Mills's highly commended.

Class 25.—(Golden-pencilled).—For the best Cock and two Hens.—First prize, Mr. Robert Fooks, Milton Abbas. Second prize withheld.

Class 26.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. E. Longman. Second prize, Mr. E. Longman. Third prize, Mrs. Mills.

Class 27.—(Silver-pencilled).—For the best Cock and two Hens.—Prize withheld.

Class 28.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. R. Genge. Second prize, Mrs. Mills. Third prize, Mr. R. Genge.

Class 29.—POLAND FOWL.—(Black and White Topknots).—For the best Cock and two Hens.—Mr. T. P. Edwards, Lyndhurst, Hants. Second prize, Mr. T. P. Edwards, Lyndhurst, Hants.

Class 30.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. T. P. Edwards. Second prize, Mr. T. P. Edwards.

Class 31.—(Golden-spangled).—For the best Cock and two Hens.—First prize withheld. Second prize, Mr. J. Crane, jun.

Class 32.—For the best Cockerel and two Pullets of 1854.—First prize, Mrs. Mills. Second prize, Mr. W. Symonds, jun. Third prize, Mr. W. Symonds, jun.

Class 33.—(Silver-spangled).—For the best Cock and two Hens.—First prize, Mr. P. Jones, Fulham. Second prize, Mr. Thomas P. Edwards, Lyndhurst, Hants.

Class 34.—For the best Cockerel and two Pullets of 1854.—First prize, Mr. Charles Edwards, Brislington. Second prize, Mr. W. Symonds, jun.

Class 35.—BANTAMS.—(Gold-laced).—For the best Cock and two Hens.—First prize, Mr. Joseph Goodenough, Godmanstone. Second prize, Mr. Joseph Goodenough, Godmanstone.

Class 36.—(Silver-laced).—For the best Cock and two Hens.—No entry.

Class 37.—(Variety).—For the best Cock and two Hens.—First prize, Mr. Thomas Coombs, Dorchester. Second prize, Mr. Charles Edwards, Brislington.

Class 38.—GESE.—(Of any breed).—For the best Gander and one Goose.—First prize, Mr. Henry Fooks. Second prize, Mr. Henry Fooks. Mr. William Manfield's commended.

Class 39.—DUCKS.—(Aylesbury).—For the best Drake and two Ducks.—First prize, Mr. T. P. Edwards, Lyndhurst. Second prize, Mr. T. H. Calcraft, Rempstone. Mr. W. L. Henning's, highly commended. Mr. T. Edwards's commended.

Class 40.—(Rouen).—For the best Drake and two Ducks.—First and second prize, Mrs. Henry Fooks, Whitechurch.

Class 41.—TURKEYS.—(Of any breed).—For the best Cock and one Hen.—First prize, Mrs. H. Fookes. Second prize, Mr. C. Edwards. Mr. Symonds's highly commended.

Of the Extra Stock, Mrs. R. W. Harding's, Stinsford, Fowls (Rampkins), were highly commended. Mr. W. L. Henning's Aylesbury Ducks, and Mr. F. C. Henning's Cochins-China Cocks, commended. Mr. Edward Pope's Dorkings (Cockerels), not exhibited for a premium, and not for sale, were much admired.

THE SPARKENHOE FARMER'S CLUB EXHIBITION OF DOMESTIC POULTRY.

THIS, as usual, was a very interesting Exhibition, no effort being withheld by the committee to secure its success. The general arrangements were worthy of all praise, the weather all that could be desired, and the attendance on both days (more particularly of ladies), most extraordinary. The Exhibition was held on the exceedingly beautiful

grounds in the rear of the Royal Hotel, at Ashby-de-la-Zouch, a spot most suitable for the purpose. The sparkling of fountains in the glare of the midday sun, the gay attire of the numerous groups of fashionably-dressed ladies, the enlivening strain of the Ashby band (that made the welkin echo to its martial airs), each, and all, tended to increase the attractions of this general holiday, and produce a revenue, that if it is wisely appointed, will render future exhibitions of this Society most important ones. In proof of the deep interest felt by all classes in this neighbourhood, it may be mentioned, that five hundred sat down to a public dinner in a pavillion specially erected for this purpose, among whom were many individuals of title, and more than 150 of the fair sex. But we must turn to "the poultry tent." The general arrangements were very light and convenient, and were, consequently, the subject of much public approval; the avenues were much wider than usual, and, therefore, the inspection of the poultry was very ready and convenient; though the placing of water-fowls in the upper tiers is highly censurable, as it gives anything but a *cleanly* appearance to the birds below, and speedily becomes a source of grievous annoyance to female visitors. With these few remarks, we will proceed to a short review.

The *Spanish* were very indifferent. The *Grey Dorkings* were a most excellent class. Many pens of first-rate birds, however, were badly matched; indeed, failing in prize-taking too often arises from this cause. The first-prize (chicken) were, contrariwise, well matched, and birds of which their spirited owner "might well be proud." The *Buff Cochins* have very rarely been excelled, and the winning groups prove how attention is now being paid to character as well as colour. Here were many lots all that could be desired, whether form or colour be taken into consideration, consequently, they had crowds of admirers, and several pens were "claimed" at the prices demanded. The *White Cochins* were the most indifferent class we remember to have seen exhibited. In the *Game* were some glorious birds, their plumage (just moulted) being lustrous and perfect. The prize *Duckwings* were unusually good; but the manner in which the comb had been cut of the cocks was highly calculated to injure the appearance of an otherwise faultless bird. The *Hamburghs* were very good specimens; and although numerous, not one single "hen-tailed cock" competed. In the first-prize (silver-pencilled) pen, the cock possessed, undoubtedly, the best tail we ever witnessed, and the whole pen were exceedingly clear in their markings and general plumage. They quickly changed ownership, and we heard were again re-sold at a high premium. The *Ducks*, the *Aylesbury*, the *Labrador*, and the *Call-Ducks*, were very good, but the *Rouens* were very indifferent apologies for that excellent variety. Perhaps never were such weighty *Geese* exhibited, the least of the thirteen competing pens being perfect giants: two pens were, however, very properly "disqualified (by the judge, Mr. Edward Hewitt, of Birmingham), all the birds being ganders." The first-prize *Turkeys* (poult) were living proofs of the result of care and attention in breeding, wondrous as to size, matched perfectly, and if success still attends them, they will always be dangerous competitors when at perfect maturity.

We append the prize list.

POULTRY.

Class 1.—*SPANISH*.—For the best Cock and two Hens, of any age.—First prize withheld. Second prize, The Countess of Chesterfield, Bretby Hall. Third prize, Mr. John Hall Joyce, Blackfordby. Five competitors.

Class 2.—*DORKING* (Coloured).—For the best Cock and two Hens, of any age.—First prize, Mr. R. Swinnerton, Nuneaton. Age, cock one year and six months, pullets six months. Second prize, The Countess of Chesterfield, Bretby Hall. Age, five months and twelve days. Third prize, The Countess of Chesterfield. Age, one year and six months. *Highly Commended*.—The Countess of Chesterfield. *Commended*.—Mr. John Huskins, Wilnecote. Twenty-two competitors.

Class 3.—*DORKING* (White).—For the best Cock and two Hens, of any age.—First prize, Mr. J. Jennens, Moseley, Birmingham. Age, three years. Second prize, Mr. J. Jennens. Age, three years and six months. Third prize, Mr. R. Choyce, Bramcote. Age, four months. Three competitors.

Class 4.—*COCHIN-CHINA* (Coloured).—For the best Cock and two Hens, of any age.—First prize, Mr. T. Robinson, Burton-upon-Trent. Age, four months. Second prize, Mr. T. Robinson. Age, five months. Third prize, Mr. J. Newbold, Burton-upon-Trent. Age, fifteen weeks. *Highly Commended*.—Mr. T. Challis, Bretby Gardens, and Mr. J. Harlow, Moseley. *Commended*.—Mr. T. Challis, and Mr. T. Clarke, Whitwick. Forty-six competitors.

Class 5.—*COCHIN-CHINA* (White).—For the best Cock and two Hens, of any age.—First and second prizes not awarded. Third prize, Mrs. Mary Cooper, Lutterworth. Age, five months. Ten competitors.

Class 6.—*GAME* (White, Piles, and Light Colours).—For the best Cock and two Hens, of any age.—First prize, Mr. J. Taverner, Hartshill. Age, five months and twenty days. Second prize, Mr. J. Wright, Ashby-de-la-Zouch. Third prize, Captain Costobadie, Thurstaston, Loughborough. *Commended*.—Mr. J. Buckley, Desford, Leicester. Fifteen competitors.

Class 7.—*GAME* (Red, and other Dark Colours).—For the best Cock and two Hens.—First prize, Mr. Guy Nadin, Stapenhill, Burton-upon-Trent. Second prize, Mr. John Wright, Ashby-de-la-Zouch. Third prize, Mr. J. Jennens, Mosely, Birmingham. Sixteen competitors.

Class 8.—*MALAY*.—For the best Cock and two Hens, of any age.—The first and third prizes were withheld. Second prize, Mr. W. Harrison, Bagworth Park. Two competitors.

Class 9.—*HAMBURGH* (Gold and Silver-pencilled).—For the best Cock and two Hens.—First prize, Mr. H. Ison, Swepstone, Ashby-de-la-Zouch. Second prize, Mr. John Mallaby Baker, Dordon, Atherstone. Third prize, Mr. J. Sharpe Spencer, Hinekey. *Highly Commended*.—Mr. J. Faulkner, Bretby. *Commended*.—Mr. J. Sharpe Spencer, Hinekey.

Class 10.—*HAMBURGH* (Gold and Silver-spangled).—For the best Cock and two Hens, of any age.—First prize, Mr. J. Sharpe Spencer, Hinekey. Second prize, Mr. J. Sharpe Spencer. Third prize, Mr. Joseph Jennens. Eight competitors.

Class 11.—*POLAND*.—For the best Cock and two Hens.—First prize, Mr. J. Ball, Glascoate, Tamworth. Second prize, Mr. Guy Nadin, Stapenhill, Burton-upon-Trent. Third prize, Mrs. Robert Bodington, Chase Lodge, Kenilworth. Fourteen competitors.

Class 12.—*BARN DOOR*.—For the best Cock and two Hens, of any age.—First prize, Mr. W. Harrison, Bagworth Park. Three competitors.

Class 13.—*ANY OTHER DISTINCT BREED*.—For the best Cock and two Hens, of any age.—First prize, Rev. G. Calvert, Beeby. (Brabma Pootra.) Second prize, Mr. J. Harlow, Moseley. (Silky or Negro.) Third prize, Mr. W. Dester, Seckington. (Black Game.) Twelve competitors.

Class 14.—*DUCKS* (White Aylesbury).—For the best Drake and two Ducks, of any age.—First prize, Mr. J. S. Spencer, Hinekey. Second prize, Mr. Jennens, Moseley. Third prize, Countess of Chesterfield. *Highly Commended*.—Mr. J. Jennens, and Mr. J. S. Spencer.

Class 15.—*DUCKS* (Any other variety).—For the best Drake and two Ducks, of any age.—First prize, Mr. J. Baker, Atherstone. (Black.) Second prize, Miss E. S. Perkins, Sutton Coldfield. (Call.) Third prize, Miss Perkins. *Highly Commended*.—Mr. R. Choyce, Bramcote Hall, and Miss Perkins. Ten competitors.

Class 16.—*GESE*.—For the best Gander and two Geese, of any age.—First prize, Mr. J. Faulkner, Bretby. (White.) Second prize, C. R. Colville, Esq., M.P., Lullington. Third prize, Mr. E. Taverner, Caldecote Hill. *Highly Commended*.—The Countess Howe, Hon. Miss Russell, Mr. John Wright, Ashby, and Mr. W. Choyce, Upton Park. Thirteen competitors.

Class 17.—*TURKEYS*.—For the best Cock and two Hens, of any age.—First prize, The Right Hon. the Earl Howe. (Dark.) Second prize, Mr. J. W. Faux, Coleorton. (Black Norfolk.) Third prize, Mr. Faux, Twycross. Four competitors.

Class 18.—*GUINEA FOWLS*.—For the best Pair.—First prize, Mr. J. Ward, Blackfordy, the only competitor.

Class 19.—For the best Cock and two Hens, of any age.—First prize, Mrs. S. Lockyer, Heather. Second prize, Mr. J. Buckley, Desford. Third prize, C. R. Colville, Esq., M.P. *Highly Commended*.—Hon. Miss Russell, Kirkby Mallory. Thirteen competitors.

Class 20.—*PIGEONS*.—*POUTERS*.—For the best Pair.—First prize, Mr. C. R. Titterton, Birmingham. Two competitors. Mr. Titterton also took the first prize for Carriers, Tumblers, and Fantails. In the latter class (23) Mr. Jennens, Moseley, was highly commended.

Class 21.—*ANY OTHER DISTINCT BREED*.—For the best Pair.—First prize, Mr. Titterton. Six competitors.

RABBITS.—No entries.

LABOURERS' POULTRY.

Class 22.—For the best Cock and one Hen, of any age.—First prize, Thomas Bull, servant to Mr. T. Stevenson, Snareston. Second prize, William Smith, servant to Mr. W. Harrison. Two competitors.

When we state that 240 pens of poultry were staged, our readers will judge of the extent of the exhibition. Of its excellence only those who had the good fortune to see it can form any correct idea. We may, however, say, that we heard it stated more than once, and that by eminent connoisseurs, that the poultry would have done credit to any Metropolitan exhibition. The *Dorkings* were especially admired, and the judge, Mr. Hewitt, of Sparkbrook, Birmingham (no mean authority), said, that some of them were equal to any specimens he had seen before. It has been said that the poultry mania is on the wane. The reverse was our impression, in viewing the fine array of plumage, form, and diversity of species presented at the Ashby show. But whether on the wane or not, the taste and rivalry which have produced such birds as those then exhibited, have enriched the country, and increased its enjoyments to an extent which, without these exhibitions, could never have been dreamt of.

VALE OF AYLESBURY POULTRY SHOW.

THIS show, held on the 3rd, 4th, and 5th instant, was most excellently managed, and in the feeding department the best we have ever seen. The show was small in numbers, but generally good, and the exhibition of *Aylesbury Ducks* splendid. One pen of a drake and two ducks weighed over 22 lbs., and the second pen of *Geese* over 52 lbs. The show of *Shanghaes*, with the exception of the first prize, were very poor indeed. The pen of *Brahma* chicken very good, and weighed 25 lbs. The pen of *Spanish* Chicken, first prize, were good, but the show of *Spanish* generally were bad. The *Dorking* Chicken were very good, but the old birds were much out of condition.

The Judges were—J. H. Catling, Esq., and T. H. Fox, Esq.

Class 1.—DUCKS (White Aylesbury).—Drake and two Ducks.—9. First prize, J. K. Fowler, Aylesbury, Prebendal Farm. 1. Second prize, Edwin Payne, Aylesbury. 11. Third prize, H. D. Davies, Spring Grove House, Hounslow. *Highly Commended*.—5. William Henry Green, Aylesbury.

Class 2.—WHITE AYLESBURY.—Drake and two Ducks.—20. First prize, J. K. Fowler, Prebendal Farm, Aylesbury. 21. Second prize, J. K. Fowler, Prebendal Farm, Aylesbury. 16. Third prize, William Henry Green, Aylesbury.

Class 3.—ROVEN.—Drake and two Ducks.—26. First prize, Theed William Pearce, Esq., Bedford. 25. Second prize, William R. Rose, Lydiard Millicent, Swindon, Wilts.

Class 4.—SPANISH FOWLS.—Cock and two Hens, of any age.—30. First prize, E. H. Strange, Amptill, Beds. 28. Second prize, Edward Terry, Aylesbury.

Class 5.—CHICKEN OF 1854.—Cock and two Pullets.—32. First prize, E. Terry, Aylesbury. 31. Second prize, G. Botham, Wexham Court, Slough.

Class 6.—DORKING (White).—Cock and two Hens, of any age.—34. First prize, H. Foster, Markyate-street, Dunstable, Herts.

Class 7.—CHICKEN OF 1854.—Cock and two Pullets.—38. Second prize, H. Foster, Markyate-street, near Dunstable, Herts.

Class 8.—DORKING (Coloured).—Cock and two Hens, of any age.—41. First prize, E. Terry, Aylesbury. 42. Second prize, Rev. J. T. Drake, Amersham. *Commended*.—40. E. Terry, Aylesbury.

Class 9.—CHICKEN OF 1854.—Cock and two Pullets.—49. First prize, E. Terry, Aylesbury. 47. Second prize, J. Botham, Wexham Court, Slough. *Highly Commended*.—54. J. Harrison, jun., Esq., Snelston Hall, near Ashbourne, Derbyshire.

Class 10.—COCHIN-CHINA (Cinnamon or Buff).—Cock and two Hens, of any age.—56. First prize, E. Terry, Aylesbury. 55. Second prize, Rev. E. J. Luce, Amersham.

Class 11.—CHICKEN OF 1854.—Cock and two Pullets.—71. First prize, J. Harrison, jun., Esq., Snelston Hall, Ashbourne, Derbyshire. 65. Second prize, E. Terry, Aylesbury. *Highly Commended*.—62. F. Lehmann, Aylesbury. *Commended*.—63. Dowager Mrs. Tyrwhitt Drake, Bucknell, Bicester, Oxon.

Class 12.—COCHIN-CHINA (Brown and Partridge-feathered).—Cock and two Hens, of any age.—No entry.

Class 13.—CHICKEN OF 1854.—Cock and two Pullets.—No entry.

Class 14.—GAME FOWL (Black-breasted and other Reds).—Cock and two Hens, of any age.—72. First prize, Theed William Pearce, Esq., Bromham-road, Bedford. 73. Second prize, James Allen, Boxmoor.

Class 15.—WHITE AND PILES.—Cock and two Hens, of any age.—75. First prize, John Mead, Aylesbury. 79. Second prize, E. H. Strange, Amptill.

Class 16.—ANY OTHER VARIETIES.—Cock and two Hens, of any age.—81. Second prize, W. H. Green, Aylesbury. 84. Second prize, Edmund Harris, Aylesbury.

Class 16.*—ANY OTHER VARIETY OF FOWL.—Cock and two Hens, of any age.—88. First prize, W. H. Green, Aylesbury. (Brahma.) 87. Second prize, Dowager Mrs. Tyrwhitt Drake, Bucknell, Bicester, Oxon.

Class 17.—GOLDEN-SPANGLED HAMBURGH.—Cock and two Hens.—89. First prize, James Allen, Boxmoor, Herts.

Class 18.—GOLDEN-PENCILLED HAMBURGH.—Cock and two Hens.—95. First prize, Dowager Mrs. Tyrwhitt Drake, Bucknell, Bicester, Oxon. 97. Second prize, Rev. J. Williams, Tring Park, Herts. *Commended*.—96. E. H. Strange, Amptill, Beds.

Class 19.—SILVER-SPANGLED HAMBURGH.—Cock and two Hens.—99. First prize, Matthew Leno, jun., Hemel Hempstead, Herts. 102. Second prize, E. H. Strange, Amptill, Beds.

Class 20.—SILVER-PENCILLED HAMBURGH.—Cock and two Hens.—107. First prize, James Allen, Box Moor, Herts. 106. Second prize, John Terry, Aylesbury.

Class 21.—POLANDS (Black with White Crest).—Cock and two Hens, of any age.—No prizes awarded.

Class 22.—POLANDS (Any other colour).—Cock and two Hens, of any age.—115. First prize, E. H. Strange, Amptill, Beds. 114. Second prize, Henry Margesson, Aylesbury.

Class 23.—BANTAMS (Gold-laced).—Cock and two Hens.—121. First prize, Uriah Spary, Markyate-street, Dunstable, Herts. 120. Second

prize, Matthew Leno, jun., Hemel Hempstead, Herts. *Commended*.—119. Matthew Leno, jun., Hemel Hempstead, Herts.

Class 24.—SILVER-LACED.—Cock and two Hens.—126. First prize, Uriah Spary, Markyate-street, Dunstable. 125. Second prize, Matthew Leno, Hemel Hempstead, Herts.

Class 25.—ANY OTHER VARIETIES.—Cock and two Hens.—No prizes awarded.

Class 26.—GESE.—Gander and two Geese.—129. First prize, F. Day, Esq., Hemel Hempstead, Herts. 130. Second prize, E. Terry, Aylesbury.

Class 27.—TURKEYS.—Cock and two Hens.—135. First prize, Abel Redrup, Great Kimble. 133. Second prize, J. K. Fowler, Prebendal Farm, Aylesbury.

Class 28.—GUINEA FOWL.—For the best pair.—137. Second prize, Philip Payne, Walton Grove, Aylesbury.

Class 29.—PIGEONS.—For the best pair.—139. First prize, Rev. E. J. Luce, Amersham. 141. First prize, James Lowndes, Esq., the Bury, Chesham. 142. First prize, James Lowndes, Esq., the Bury, Chesham. 143. First prize, James Lowndes, Esq., the Bury, Chesham. 144. First prize, James Lowndes, Esq., the Bury, Chesham.

Class 30.—DEAD POULTRY.—Fit for table.—147. First prize, J. K. Fowler, Prebendal Farm, Aylesbury. 148. First prize, J. K. Fowler, Prebendal Farm, Aylesbury. 151. First prize, Abel Redrup, Great Kimble. 152. First prize, W. H. Green, Aylesbury.

COTTAGERS' PRIZES.

Class 31.—MIXED BREEDS OF FOWLS.—Best Cock and three Hens, of any breed.—153. Second prize, James Brooks, Aylesbury. 154. Second prize, John Webster, Aylesbury.

Class 32.—EXTRA STOCK.—*Commended*.—168. E. Terry, Aylesbury. 170. J. Margesson, Aylesbury. 180. H. Margesson, Aylesbury. 175. W. Denchfield, Burston, Weedon. 93. Mrs. Dowager Tyrwhitt Drake, Bucknell, Oxon.

SOUTHALL POULTRY SHOW.

THE Poultry and Cattle Show at Southall, in connection with West Middlesex Agricultural Society, took place on Friday, October 6, the most dreary day that has occurred for months. The poultry, though few in number, were remarkably good for a minor show, and there were one or two circumstances connected with it not undeserving of notice.

The show lasted but one day, and the birds were at the owners' disposal at five o'clock. They were exhibited in the owners' own white wicker baskets, two feet six inches square, with open-work (two inches apart) top and front. The effect produced by this arrangement was very pleasing, the birds being placed at a uniform height were in all the better condition for not having to undergo the process of being unpacked and packed by assistants, who oftentimes manifest more energy than discretion. The expense of the pens forms so heavy an item in the expenditure of local shows, that the plan of making each exhibitor provide his own, seems, in some cases, worthy of imitation, especially as the individual expense is not heavy, the show basket taking the place of the hamper, which must otherwise be provided for the transit of fowls.

Another pleasing innovation in the usual proceedings was, that the labouring population of the neighbourhood were admitted without charge during the last two hours of the show.

It is to be regretted, that the subscription of a guinea was necessary to enable any person to exhibit poultry, as this greatly limited the number of pens, and it is surely useless to make exhibitors state the ages of the birds in the chicken classes, as the judges pay no attention to the statement, and it leads to great unbelief on the part of the spectators.

Mr. Brevington sent some magnificent *Aylesburys*; the drakeling (if I may coin such a word), in the first prize pen being a most extraordinary bird; and Mr. T. Jones was successful with some remarkably good *Silver Poland*s, and other stock.—W. B. T.

THE DOUBLE WHITE ROCKET—BLACK BEETLES.

I THINK if M. D. Edin., Glasgow, could but see the double white Rockets grown by some of the cottage gardeners here, he would not think them nearly extinct. They cannot depend on Brompton Stocks for a show, so they get the nearest thing in appearance, and a good make-

shift it is. I think a bed of them would look well in the grounds at Sydenham; and if you think two hundred and fifty would make a respectable bed, and be acceptable, I could answer for their being sent.

Now let me ask you not to forget your old friends the cottagers now you are so enquired after by the nobility, gentry, and clergy; for, rest assured, the well-kept garden keeps many a poor man from spending the greater part of his wages in the gin palace.

I regret to add that gardens are almost beyond the reach of the poor man in this neighbourhood, and to show how they are valued, in case of want, they are the last thing they part with, and then, with many a mournful look.

BLACK BEETLES.—A hedgehog is the best thing you can get to clear the house or kitchen of the above pests; it is quite harmless, always out of the way, as it only comes forth at night. You should feed it as you would a cat.—A COTTAGE GARDENER, *Birmingham*.

PHENOMENA IN THE EGGS OF A SHANGHAE HEN.

I FEEL happy to furnish you with the following particulars, in compliance with a wish that has been expressed that they should appear in THE COTTAGE GARDENER.

In the summer of 1850, I bought a Cochiu-China cock and hen of a poulterer in Piccadilly, being half-grown birds of that year. In the autumn of 1852, the hen only laid two eggs, and the cock, to whom she was attached, becoming ill, and being shut up in a house by himself, the hen never left the outside of her mate's place of confinement, but lay day by day at the entrance of it, where she could see him through a lath-door. On the cock's dying, the hen became very disconsolate, always lingering about the place where the cock had died. Having no mate for her, I gave her, in the beginning of the winter, to my brother, who lives in a very bleak situation near the sea. Moulting time came on, and what with this, and the loss of her husband, and the coldness of the situation, the hen lost flesh rapidly. She eat but little; her cheeks became pale and sunken, and she could scarce stand. Being apparently in a rapid consumption, my brother sent her back to me, that I might do as I liked with her. I determined to try and save her if I could; so I placed her in a coop in the brewhouse near the oven where it was warm, and commenced feeding her generously. I gave her half a pat of fresh butter and a raw egg regularly every morning and afternoon. Besides this, she had boiled eggs chopped up, mixed beef or mutton, pearl barley, the remainders of puddings, and bread. I used to give her a small quantity at a time, feeding her several times in the day. At first it was with difficulty I could persuade her to eat, but soon she fed ravenously. She now made flesh very quick; and ere long was so completely recovered, that my brother could hardly believe her to be the same bird. I now let her out, and, from this time, she never had any other food than what she got in common with the other fowls. One day after this, in the summer of 1853, the yard-boy told me that the hen had laid again. Her eggs were duly placed on one side for sitting. She laid regularly for about four days, and, on the fifth day, on going into the laying-house, I found that she had got on another bird's nest. I, therefore, put her on her own nest; but, having been disturbed, she left the laying-house altogether, and would not lay that day. The following day, I found she had laid an egg as large as a goose's. It was very heavy, and from the peculiar way in which it shook, I felt certain that there was another egg inside. I, therefore, blew the egg to see what it contained, and found, not only the ordinary amount of white and yolk with embryo accompanying, but also a perfect, common-sized, hard-shelled, egg inside. With some little difficulty, I made a hole in the inside egg, sucked it, and found it to contain a perfect white, and yolk, and embryo. The egg, before the outer one was blown, and the inner one sucked, weighed 6½ ozs. The following day she laid an ordinary egg. The day after that, being disturbed again, she did not lay; and on the following day we found another large egg (No. 2), exactly similar in every respect to that described above; this weighed 7 ozs.

Both of these curious eggs, together with the eggs which they contained, were pretty perfect in shape, one was quite perfect. There was, however, this difference in each, between the outer and the inner egg; the inner ones were of the ordinary thickness, and of the usual rich chocolate colour of Cochiu-China eggs; but the outer ones were extremely thin in the shell, so thin, that when first laid the smallest end yielded to the slightest pressure, and when the egg became cold, it easily cracked. The colour of the outside egg was also, in each, much lighter than that of the inner one. After pre-secting me with these two, she laid irregularly; and when she did lay, she laid sometimes an ordinary egg, and sometimes a "*lusus nature*." She laid somewhere about sixteen or seventeen eggs in all. The extraordinary eggs that she laid, besides the two mentioned above, were as follows:—

No. 3. An ordinary egg with membrane encasing it *outside*, like that which may be seen *inside* the shell of any common egg. The egg inside the membrane contained white, and yolk, and embryo. The membrane was tight round the shell of the egg it enclosed, except at the top of the egg, where the egg contained about a teaspoonful of "lymph." No. 4. An egg similar to the two first described, but the outer egg of the two very crooked in form. No. 5. An ordinary egg, with white, yolk, and embryo, and a membrane (similar to that of No. 3,) encasing it, with neither "lymph," albumen, yolk, or embryo within it, but wrapped close round the egg. No. 6. An ordinary egg with white, yolk, and embryo, encased by a membrane containing "lymph," with no yolk or embryo. This egg was equal in size to any of the three large perfect double ones. No. 7. A shell-less membrane, containing only thick "lymph," with a very small mixture of thin yolk-like appearance, the membrane being rather smaller in size than a common egg, and running into a tail of about three inches long, and two-eighths-of-an-inch in diameter, filled with "lymph," and open at the end. The above eggs are still in our possession. Some of them were laid in the laying-house; others were dropped about the place. I myself saw her lay one in a standing posture, as I was walking through the chicken-yard. The hen also laid another egg, similar to the first two described; I destroyed the outside shell, and put the inner egg under a hen with a sitting of eggs, all of which became added. The hen never sat after laying the eggs; but from this time, to the autumn of 1853, (when she was killed, owing to her becoming consumptive again,) she always sat on her nest in the laying-house for a couple of hours *every morning*, whether there were any eggs for her to sit on or not. I think that eggs, Nos. 3, 5, 6, 7, plainly showed how eggs, Nos. 1, 2, and 4, were formed. When the hen was prevented laying her egg, the unladen egg remained within her, and the second day's egg formed outside the unladen one. Whenever she was two whole days without laying, two perfect eggs were formed, the one within the other. When she was more than one day without laying, but laid before the second day was fully expired, the first day's unladen egg had the shell-less membrane encasing it, with the membrane either empty, or partly filled, or completely filled with lymph or albumen, as above described, in proportion to the time when she laid it. Nobody can doubt that her having been previously semi-barren, and having recovered from her severe illness in so remarkable a manner, had something to do with the wonderful character of the eggs she afterwards laid; but what her internal structure was, and what enabled her to lay eggs of so extraordinary a nature, it is impossible to conceive. She was sentenced to death without my knowledge, when I was away from home. Had I been at home, I might have been able to institute a post-mortem examination, which was not done. I should be interested if any of your readers could solve this mystery.—HENRY A. HAMMOND, *St. Albans-Court, Kent*

WHAT DO YOU THINK OF THE CRYSTAL PALACE.

(Continued from page 15.)

Piranesi's view of ancient Rome, some quarter of a century ago, were only known to a few hundred connoisseurs and architectural artists; at the present time, we apprehend, they

are known more or less to millions—to the many who simply read for instruction, and who gather information from the most diversified sources, whatever may be its nature—for the pioneer of penny literature, the "Penny Magazine," occasionally copied Piranesi's views, to inform and instruct its readers; and so vigorously has that once useful publication been imitated, that there is scarcely a single structure in the costly work alluded to but is now as familiarly known to the ordinary reader of cheap literature as St. Paul's is to the citizen of London, or the Madeleine to the inhabitant of Paris. Again, when Sir William Gell, even within the recollection of many of us still living, produced his distinguished work upon Pompeii, and the Roman city was illustratively restored for our amusement and edification, how few could embrace the opportunity of even perusing the production of that distinguished antiquarian and architect. As a consequence, it was little known, and had less influence upon the practical instruction of the time than it otherwise might have had. Had Layard, even, excavated Nineveh at the period to which we allude, there is very little doubt that his "winged bulls" would have been little better than a myth to the thirsting many, and a mere idle study for the *insouciant* few; for books, plates, drawings, paintings, &c., were anything but the prerogative of the mass, and there was, therefore, little hope of inspiration being drawn from the spirit and genius they contained by those who could scarcely obtain a glimpse of them. Strictly speaking, however, this remark is more justly applicable to this country than to many parts of the continent; for it is a recorded fact, that when Denon's great work on Egypt first made its appearance, several copies were exposed in the great *salle* of the *Ecole des Beaux Arts* in Paris, in order that the public should become acquainted with the contents of the work, and catch a new idea or so from its illustrative matter. In this country, and in those days, on the contrary, such a work as *Egypt Illustrée* would have been locked up in the British Museum; and who would have presumed to approach such a treasure? As to looking at it, in a studious sense, that were out of the question altogether; it would have been strictly forbidden to do so, and little less than sacrilege to have requested such a boon. Not so, however, they in France. Artists, manufacturers, book amateurs, and book-illustrators, all went to see *Le Grand Ouvrage sur l'Egypte*, and all benefited more or less by the sight. In less than a month or so, the whole industry of France was breathing of Egypt and its studies: china, porcelain, silks, woollens, shop-fronts, and every possible device that could administer to the wants of that highly artificial community, were covered with imitations from the illustrations of Denon; and the manufacturing art of France was proportionately improved. Herein lies the secret of the success of our neighbours in their designs. It is not the climate, as many have naively suggested; neither is it in the temperament of the people: it consists simply in the cultivation at an early period of the artistic faculties, to which all their governments for the last half century have given their cordial assistance, and a ready access to the finest specimens and the choicest models which art could produce. The art, in these instances, almost ceases to become an art: it is second nature; for it is altogether impossible for any, except those who won't see, to have daily before their eyes elegant features and graceful forms, and yet endure, much less imitate, that which is vulgar.

These are advantages which we have never possessed until now. We have had painting, sculpture, engraving, and other artistic developments; but they have been confined to the few. Individual energy has never accomplished here what national governments have done elsewhere. In this country, even in matters of art, all has been done by the people for the people; in France, and other parts of the continent, on the contrary, everything is done for the people by the state, otherwise they might, and doubtless would, have been in a similar condition to ourselves, as regards artistic skill and industrial illustration.

With the "won't-see class," we repeat, we have done for the present; but to the "can't-see class" we should respectfully answer, were the question which we have placed at the head of this article—"What do you think of the Crystal Palace?"—put to us:—

The delight you experienced in your youth, at the first sight of a print, which illustrated the meaning of what you

were reading about, and which first vividly impressed upon the mind the spirit and ideality of the subject, you have repeated and reflected in a most glorious manner in the objects of the Crystal Palace. All that the Bible so inspiringly inculcates, as regards mere intellectual improvement; all that Homer sings so delightfully about, and all that Milton or Shakspeare idealised, have there received a material form. Nineveh, the great and mighty, whose name is the very symbol of ancient power and grandeur; Egypt, so much read of and so little known to the multitude who read about her, are here placed before us as they existed in the plenitude of their power. Greece, the classical, the refined, the poetical, lives once more in the apartments of the Palace; and Rome, the mighty and majestic, with her imperial pomp, has there her features reflected for your benefit, in more forms than one. The courts are filled with representations of the heroes and sages of all ages. Every glorious work of art produced since our race began is represented in the majestic vistas of the Art-temple which you, the "can't-see class," are half-disposed to ignore and repudiate. But what can a mousing owl know of objects in the bright blaze of the noon-day? The vision of the bird is not adapted for such a knowledge:—

"Shall winking tapers show the sun his light?"

In one word—the Crystal Palace at Sydenham is an epitome of the art-excellence of the ancient and modern world—the *light of the human mind massed in a material form*, equally for the benefit of those who "can't see," as those who are able, willing, and most intensely anxious to see, and to "mark, learn, and inwardly digest," what they really do see. This is what THE HOME COMPANION thinks of the Crystal Palace; and it thinks, moreover, that none should enter that singular structure without feeling that they owe a debt of gratitude to the Paxtons, the Lathams, the Waterhouse Hawkins', the Digby Wyatts, and the Owen Jones' who have directed their minds in so useful a manner as to produce so intellectual and such a highly instructive work of art.—*Home Companion*. *

QUERIES AND ANSWERS.

GARDENING.

GREENHOUSE QUERIES.

"BEING desirous of erecting a small glass-house for the better protection of my plants in winter, &c., I venture to inclose a rough sketch of the only position I can conveniently assign for this purpose. It is a nook at the bottom of my kitchen garden, very sheltered, and exceedingly hot.

"Perhaps, in your 'Answers to Correspondents,' you will favour me by noticing the following queries, viz.:—Would two feet added to the back wall of scullery, seven to ten feet, be sufficient height? At back end, five to five feet six inches; front width ten feet—and the length, of course, only that of scullery wall (fifteen feet). This would only take three sashes; and, therefore, if the middle one only opens with a slide, would not that do for the roof ventilation? the other two to be fixtures. And what size and description of glass would you use? Hartley's Rough Patent? Finally, how shall I manage to keep the frost out? A very little heat would do, if rightly applied, because the situation is so warm; and, generally, our winters are not severe. I have had some idea that a small pipe from the boiler in the kitchen range might be sufficient. Certain it is, I do not see where the stock-hole for a flue could be placed, as the spaces, right and left, are scarcely six feet.—WARNER, *Isle of Wight*."

[We should place no value on the place being exceedingly hot: an exceedingly cold night would make havoc of your best plants.

2. The situation will answer admirably.

3. Twelve feet high for a back wall—or even ten or eleven would do, and five-and-a-half feet for the front; but six would do better if the back wall was raised to twelve; and half, at least, of that front should be glass.

4. If you do not intend having glass in front, then a hipped roof, like that at Hitchin Nursery, would suit you best.

5. Supposing you have a lean-to roof, the centre sash

* The *Home Companion* is an excellent illustrated journal of popular literature, published weekly, price three-halfpence.

made to slide will be sufficient; but it will be better to make it in two. Air would also be given in front and at the door.

6. Size of glass according to fancy and price; eight by six a good size, and easily mended. Sixteen by seven is also a good size for thick glass. Hartley's Rough Patent will do admirably for the roof, and crown glass for the front.

7. There would be no difficulty in having a stock-hole in a space of six feet, and covering it over with a trap-door; but as your kitchen range seems so handy, nothing could answer better than two small iron pipes taken from it, entering into two, three, or four-inch pipes in the house. Pipes one inch in diameter would be sufficient for the boiler, or even less. If your boiler has a moveable lid, your pipes must not rise above it, nor so high by a few inches. If your boiler is a close one, fed by a pipe or a cistern several feet above it, your pipes in the house may also rise a little above the boiler, provided they are below the supply-cistern. Two stop-cocks would let the heat on and take it off at pleasure. Provided you have iron for a couple of feet next the boiler, you may use lead for conveying the water to the pipes in the house; and, as mentioned already, the space through which the pipes pass may also communicate with the house by means of a small chamber.]

ALLAMANDA VERTICILLATA NOT FLOWERING.— SELECTION OF PASSION-FLOWERS.

"I have a large plant of *Allamanda Verticillata*, which has very much increased in growth, but shown no flower; it has been kept at the cool end of a stove, with plenty of pot-room. Can you assist me inducing it to flower? Some time since, I purchased, of a nurseryman, two *Passifloras*, one he styled *Alata surperba*, and the other, *Bonapartii*; when they came into flower they proved alike. Will you inform me which variety of stove *Passiflora* I had better purchase as a good contrast to *Alata superba*? The nurseryman has one named *Decaseneana*; but I know nothing of it, and may be again deceived. I have *Kermesina*.—T. C."

[The *Allamanda*, probably, will not bloom now this season. Keep it in much the same position; but give it as much light as possible. Prune back in March, and without potting, plunge the pot in a moderate hotbed, and by Midsummer you will have strong shoots and bloom. We presume your plant is either too young, or has too much pot-room. The whole of this genus, as well as *Dipladenias*, &c., dearly love bottom-heat when growing.

Much confusion exists as to *Passion-flowers*. What we term the *Alata* has the beautiful coronet standing almost straight out; *Buonaparteia* and *Quadrangularis* are larger, and the coronet more resembles a flattish cup; the last we consider the most handsome and sweet of all *Passion-flowers*, and hosts of our young lady friends confirm us in our opinions. As contrasts, and variety, we would recommend *Loudonii*, purple, and *Coccinea*, scarlet. In many places the latter is found under the name of *Princess*; the flowers hang in bunches something like grapes.]

RASPBERRY-SHOOT GRUB.

"Amongst the many queries sent to your valuable work for information, I have not as yet seen any article on the injury done to that valuable fruit, the Raspberry. I have a bed of about three dozen of this shrub (some old ones), which generally throw up from six to eight fresh canes during the season, kept in good order and pruning at the appointed time; but, after all my care, I cannot find out this singular cause of injury to the plants. Now, for the last four or five years, when the canes are in full leaf, and just in flower-bud, or sooner, I find that nearly all the plants are more or less affected, either from the ravages of an insect, or some hidden disease in the plant; the effect of which is to cause the fruit and other stalks or shoots from the parent tree, for three or four inches, to be, as it were, *bit at a joint*, and the point of the stalk is fallen down in a pendulous state, and, of course, dies away, fruit and all. I have tried all means, by examination, and by digging in soot at the roots, but of no avail; and shall be obliged by any information at your convenience. I have inserted new canes at different times, which have been somewhat affected. The aspect is S.E. by S.; and I have added loam to the soil, with manure.—A SUBSCRIBER."

[The soil has nothing to do with this injury to your Raspberries. The stalks and shoots are eaten through by a little red grub, hatched from an egg deposited there by a very pretty little moth, called *Xamprona corticella*, the same, we believe, as *Tinea corticella* of some Entomologists. We know of no remedy.]

POULTRY.

WET ROUP IN PIGEONS.

"We had a Fantail hen Pigeon, which, one morning, we found lying on the ground, unable to stand. From its mouth was running a thick white liquid: it frequently gasped.

"Being as yet inexperienced pigeon-fanciers, we had to rely on books; and from comparing the symptoms of the bird with those recorded in the books, we thought it most like the wet roup, and so gave it peppercorns. Would you kindly tell us, through the medium of your paper, what you think of its death?—G. H. Tr."

[In the disease termed "Wet Roup," the nostrils discharge a thick fœtid liquid, and the attack is seldom so rapid as to prostrate the bird at once, as in your case. Some disease on the brain, causing paralysis of the limbs, would appear to have been a more probable cause of death. But in neither case should we have anticipated the slightest benefit from the administration of peppercorns.—W.]

BEEES.

"A NOVICE IN BEE KEEPING is anxious to know what is to be done with a *very small* swarm of bees which she has in a rather large box-hive. They were brought from a distance, and the greater part of the comb was broken in the carriage. Another hive of the same dimensions stands near the one alluded to, and 'A Novice' has been told, that the bees will unite if the hives are placed close to each other. Is this probable? In the commencement of June, 1853, a swarm of bees were lived in a wooden (box) hive; they yielded no honey either that or this present summer, neither have they sent off a swarm; but, about a month back, after the *massore* of the *drones* had taken place, the bees made a sign of swarming; they, however, returned again to the hive. About three weeks afterwards, a queen bee was found at the entrance half dead. Is this anything unusual? 'A Novice' will be glad to find a communication for her in *The Cottage Gardener*.

"She has placed a feeding trough, containing sugar and beer, boiled together, where the bees can easily obtain access, but they will not take the food at all; probably they have been frightened by finding wasps in the trough."

[Your "very small" swarm of bees will not unite with the stronger one by placing them side by side. Finding a queen bee at the entrance of the hive is not an unusual thing. Feed your bees at the top of the hive, and give them sugar, water, and honey, as directed in *THE COTTAGE GARDENER*. It will be better not to disturb the bees in the full hive, but unite the weak stock to another weak one.]

SENDING BEES TO THE MOORS.—SIZE OF PAYNE'S HIVE.

"In corroboration of your remarks in *THE COTTAGE GARDENER* of the 26th, on the advantages of removing Bees to the Moors at the proper period, I beg to state, that I sent thirteen hives, my entire stock, on the 5th of August, to the vicinity of the Heath, a distance from my residence (Newcastle-on-Tyne) of about twelve miles. I had them brought back September the 16th, and found that together they had increased in weight 290lbs., or, on an average, about twenty-two pounds each.

"I have in two instances tried the plan of taking hives by means of chloroform, as recommended by your correspondent, 'J. R. N.:' the result has not been satisfactory; numbers of the Bees having never recovered from the stupor induced by it. I shall, however, give it further trial.

"Will you kindly favour me with the dimensions of the hive Mr. Payne now uses. Mine are of the size recommended in his work—twelve inches diameter, by nine inches in height, measuring inside. I believe he has changed from the above shape and size.—A CONSTANT READER."

[The result of sending the Bees to the Heath is very satisfactory, and we hope many will be induced, from this account, to follow the example another season. Chloroform seldom answers for stupefying Bees, the extreme care required in using it is more than persons can generally bestow upon it. The hive which Mr. Payne now uses is eleven inches deep, and fourteen inches wide, measuring inside.]

VINEYARDS IN AUSTRALIA.

THE following is a portion of the address delivered by Henry Carmichael, Esq., President of the "Hunter River Association," on opening the proceedings at the annual meeting of the association held on Wednesday, the 3rd of May:—

To induce the more extensive cultivation of the vine throughout the colony, the statement of a few statistical details may have influence.

That wine of first-rate quality can be produced in this colony is now established.

At one of the early meetings of this association, a sample of Chambertin (a class of French wines of deserved estimation, known to have been preferred to all others by Louis XIV., and by Napoleon the Great) which had been imported into the colony by the respectable firm of Lyall, Scott, and Co., and which he had every reason to regard as genuine, was submitted for comparison before good judges of wine (not members of the association) with samples of corresponding wines, the product of Brandon and Irrawang Vineyards. The resulting decision was, a preference of the colonial wine to the Chambertin in some particulars—a preference of the Chambertin to the colonial in others; and an unhesitating recognition by all of their close resemblance to one another in general character.

At a meeting of the New South Wales Vineyard Association, a sample of French wine which had been sent for presentation to the Great Exhibition in London, and which, therefore, must have been esteemed by the French grower himself of superior quality, was brought into comparison with wines exhibited in Sydney. The result was a decided preference, by the judges, of a sample of colonial corresponding wine, the product of Camden Vineyard.

A sample of red wine, the product of Porphyry Vineyard, forwarded from Sydney for the Great Exhibition in London, was tried at several parties at the Palace—being placed on the royal table without remark as to origin or history, and allowed to take its chance with other wines at the option of the guests; when it was deemed excellent by all parties, and preferred next after the best samples present. This wine was bottled when only 18 months old, at a time when it was pronounced, by judges in the colony, to be too new, and not to have its character fully developed. It had in it no admixture of alcohol, saving that arising from the fermentation of the must; it had been placed on the royal table immediately on its arrival from New South Wales, after the jumbling of a voyage from the antipodes.

In one of those interesting communications which our respected President of last year had the privilege of receiving from Baron Liebig, we have it on the authority of that highly competent judge, that our colonial wines (said specially in reference to wines the product of Irrawang vineyard), in their contents of alcohol, and in fixed constituents, are not behind the best French and Rhenish wines; that the red Australian wine greatly resembles a mixture of Burgundy and claret which it surpasses in strength, and by careful management of the vintage and cellar operations may be brought to equal it in bouquet.

A sample of Irrawang wine made from the Lambrusquat grape, the vintage of 1853, which I lately had the pleasure of tasting, and which, in all probability, we may have under our examination to-day, seemed to me superior to any wine which I had hitherto tasted from that vineyard, exhibiting, in my estimation, a decided proof of progress in our vintage proceedings.

Only last week, it was my good fortune to taste, at the proprietor's table, Brandon wine of the vintage 1843, a sample of the same wine as that which was, at our early meeting here, brought into comparison with Chambertin of France. Time, in my opinion, has added to its excellence, so that it would bear still more favourable comparison with

Chambertin now. This is a sample of colonial wine which I have heard a gentleman of acknowledged taste in these matters declare, repeatedly, he would willingly procure for his use, if he could, at the cost of a guinea per bottle.

The Hermitage wines of the Kirkton vineyard, and some white wines from the vineyards of the Upper Paterson and Allyn, have commanded high approval at our past meetings; and, generally speaking, we have had, from year to year, ever since the origination of our society, evidence of the progressive improvement in the wines produced by the several members of the association. Every year's increasing experience is manifestly telling favourably on the products of our vineyards.

Out of these particulars, it seems to me, we have grounds sufficient for declaring the production of superior wines in this colony *un fait accompli*. In the onward progress of our vineyard cultivation, therefore, I see no reason why this colony should not look forward to the possibility of coming into successful competition in the general market of the world with the most favoured of the wine countries in Europe.

A consideration, too, which seems to be of some value as bearing on this result, arises out of the fact that the vines which we have been chiefly cultivating are those varieties which have been imported from France and Germany; whereas our climate bears a nearer similarity to that of Spain. The probability is, that had we cultivated, in the first instance, cuttings from the vineyards of Spain and Portugal, our success would have been more marked and more immediate. Although, from what quarter soever the cuttings may come, the result of acclimatisation, in the course of time, must be the production of wines peculiar to our own localities, and bearing the stamp of such value as their intrinsic qualities shall command from competition among the tastes of mankind. The object of the preceding observations is simply to show cause that our experience hitherto affords us ground for rationally upholding the production of good wine in this colony to be no longer a thing problematical.

(To be continued.)

TO CORRESPONDENTS.

CORCEA SCANDENS, &c. (Azile).—It is a greenhouse climber, but flourishes out-of-doors during the summer months, flowers freely, and even ripens seeds. It would be more plague than profit to try to protect it through the winter out-of-doors. Seeds should be sown in the spring months, in a hotbed, by which means good, strong plants may be ready to plant out for training on the open wall, or trellis, if required, by the middle or end of May. *Carnations* and *Pansies* are as hardy as almost any plants when in good condition, growing in the open ground, if they are kept free from weeds by continual attention to earth-stirring, and a little top-dressing in the early spring with leaf-mould or some other such good material. The two plants you enclosed are the Largest Quaking Grass (*Brixa marima*) and the scarlet Flower is *Mimulus cardinalis*.

CHURN.—An Amateur wishes to be informed which is most suitable for use where two cows are kept—the American, the Sussex, or common Barrel Churn?

HYDRANGEA NOT FLOWERING (L.).—How can we advise without knowing in what locality and on what soil you live?

MEASURE OR PIECE-WORK.—"I look every week for an answer to my inquiry. The small Tan sifted out of old tan-heds. This is very fine and small, what is it good for? Shall I soak it with the liquid from the stables, and put it in a heap to rot, and then use it in the mixture for potting plants? [It will not do for potting. If decaying, it will make good manure with the liquid.] *Stove and Greenhouse Plants—Cuttings.* I should be very thankful for a few of choice things, and will send you postage stamps to send to any kind correspondent inclined to give me a few. Fuchsias to form a part.—T. W."

ALTRINCHAM POULTRY SHOW.—"In the report in THE COTTAGE GARDENER of the Altrincham Poultry Show there are two mistakes as to the prizes awarded, viz., in the 'Hamburgs of any Breed,' you give the first prize to W. Coberton, and the second to Lady Eleanor Hopwood. Now the fact is, my Golden Spangled Hamburgs took the first society's prize in their own class, and also took first and second prizes for the 'Local Prize of any Colour'; the others, I fancy, took the society's prizes in their own class. You also state that my Buff Cochins were commended; they were not, but a pen of Grey Shanghaes were highly commended, and the first extra local prize of £2 awarded to them. I suspect the error has arisen from there having been two sets of prizes.—GEO. FELL, Warrington."

PLUMS (A. B. C.).—Both *Belgian Purple* and *De Montford* are excellent Plums, the one ripening in September and the other in August; but we do not know *Guthrie's Aunt Ann*; we, therefore, cannot advise you which of the three to remove. The two former are worthy of the situation they now occupy. Mr. Guthrie, of Dundee, raised some varieties of Plum, and "Aunt Ann," perhaps, is one of them.

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WEEKLY CALENDAR.

D M	D W	OCTOBER 24—30, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
24	TU	Short-eared Owl comes.	30.063—29.886	62—44	S.	—	41	48	5 59	3	15 41	297
25	W		29.825—29.722	63—40	S.	—	43	46	6 38	4	15 48	298
26	TH	Whitethorn leaves fall.	29.703—29.654	67—47	S.	20	45	44	7 29	5	15 54	299
27	F	Tortoise buries.	29.648—29.568	64—52	S.	36	47	42	8 36	6	16 0	300
28	S	ST. SIMON AND ST. JUDE.	29.593—29.493	61—47	S.	20	48	40	9 59	7	16 5	301
29	SUN	20 SUNDAY AFTER TRINITY.	29.947—29.822	56—37	S.W.	—	50	38	11 25	8	16 9	302
30	M		30.056—29.992	54—32	N.E.	—	52	36	morn.	9	16 12	303

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 54.7°, and 38.3°, respectively. The greatest heat, 68°, occurred on the 24th, in 1833; and the lowest cold, 23°, on the 26th, in 1854. During the period 95 days were fine, and on 94 rain fell.

It is usual to stigmatize antiquaries as "The spiders of literature;" but, with much more justice, they might be called its "Pearl-divers." They go down into places where no one else would think of finding "the treasures of the deep," and they bring up "things of value" which take a high place in the caskets of the historian and biographer.

Two of these Pearl-divers set forth, a few weeks since, to divo for information relative to a man of whom but little is known, but who is one of the best—perhaps, the very best—of our early writers on gardening. We mean, STEPHEN SWITZER.

All that had been previously known of Switzer's history will be found in our third and sixth volumes; yet much remains to be discovered concerning him, and amongst the rest even his birth-place had to be made known.

Our two "Pearl-divers" remembered that, in his "Fruit Gardener," Switzer had said, "The best Walnut-trees I ever saw are those that grew upon chalk. Such are those that grow about Ewell, near Epsom, and in many places of *my own native county* of Hampshire, there being one cut down, some few years ago, in the park belonging to the Right Honourable the Lady Russell, at *Stratton*, that did spread, at least, fifty yards diameter."

Our two "Pearl-divers" being at Winchester, in one of their divings in old church-yards found there a very recent stone, in that of the city's Hyde Parish, to the memory of a "Stephen Switzer;" and one of them remembered that a boy, also named "Stephen Switzer," was just bound apprentice by one of the many charitable institutions in the said ancient city of Winchester. Upon enquiry, these "Pearl-divers" also found that there were more "Switzers" in the said city, and that they were "builders," had been of the same craft from generation to generation, and that they had migrated from *Stratton*, in the same county.

So, forth our two "Pearl-divers" went, in hope of finding, at the said hamlet of *Stratton*, some records of the birth and parentage of the "Stephen Switzer," of horticultural celebrity.

It is no part of our duty to record of what they discoursed by the way. It might have been of that most memorable owner of *Stratton*—the great Protestant-martyr—Lord William Russell; it might have been of his transcendent wife, Rachel Wriothesley; it might have been of the wild plants by the way-side; and it might

have been of the Walnuts which, as Switzer had observed before, they noticed to flourish on the chalky soil over which they journeyed. Be all this as it may; we know that they found *Stratton* to be but a hamlet of Miteheldever; and, as all burials, and all its relative records until within the last forty years, were kept at Miteheldever, it was to this parish they directed their steps.

They sought first that usual depository of parish news and parish history—the Church Clerk; but his mind was blank upon the subject of "the Switzers." He knew none of the name,—

"None were there here—nor any when
He long since said his first 'Amen.'"

As usual, at the Vicarage, their next place to seek for intelligence, they met all courtesy; but the registry, embracing, probably, the time of Switzer's ancestors, bore not a single entrance of the name.

Forth, then, the two "Pearl-divers" sallied to explore the church-yard. Here hope was revived; though, if eventually disappointed, they agreed that Flaxman's figure of "Resignation," in the church, would not have promoted their adoption of that virtue.

Many a moss-grown stone was scanned, without finding on it any memorial of a "Switzer;" but, at length, the following rewarded their patient research:—

"IN MEMORY OF
THOMAS SWITZER,
LATE OF E. STRATTON,
BUILDER,
Who Died June the 30th, 1742,
Aged 64 Years.
*In earth no glory could he see,
But hope for blest Eternity."*

This, the two "Pearl-divers" felt assured, must have been the brother of him in whom they alone felt an interest; and, upon returning to the Vicarage, another registry was produced, which confirmed that opinion, and gave them, further, all the information they needed.

It told them that,—

"Thomas Sweetsur and Mary Hapgood (?) were married, February 14th, 1676."

These were the parents of the horticultural writer, whose baptism is thus recorded on another page of the stout old brown parchment, in still browner ink:—

"STEPHEN SWEETSUR, son of Thomas Sweetsur, was baptized, February ye 25th, 1682."

The various modes of spelling the name cast some

doubts over its derivation. We are quite mindful of the Phonetic spelling of centuries just previous to the present; but still we cannot but feel there is ground for asking, are "Sweetsur" and "Switzur," for so it was written in 1721, corruptions of "Switzer;" or, are they all corruptions of "Sweet-Sir?" The latter is not an improbability, when we remember we have the family of the "Dear-loves."

THE October Meeting of the Entomological Society was held on the 2nd instant, the President being in the Chair. The Secretary read a list of donations received since the last meeting, being, for the most part, accessions to the Society's Library from the Royal Society, the Royal Society of Belgium, the Society of Arts, the Natural History Society of Lyons, Messrs. Guérin-Meneville, Koch, Bach, Perrond, and other naturalists.

Mr. Frederick Smith also presented a series of specimens illustrating the different states of six of the British species of *Ants*. Mr. Walkers sent some twigs of the Larch, shewing the action of the jaws of *Wasps*, which had employed the particles gnawed off in the construction of the covering of their nests; thus affording another instance in opposition to that recently-expressed assertion, that the covering of the nests is of a fungoid character.

Mr. Samuel Stevens exhibited specimens of the very elegant and rare little moth, *Goniadoma auroguttella*, captured in the Isle of Wight. The larvæ of this species, according to the observations and figures of Fischer von Rosslerstamm, reside in curious little coagulated moveable cases, like the seeds of some plants. He also exhibited a curious variety of the *purple Emperor Butterfly*, captured near Rochester; a hermaphrodite *purple Hair-streak Butterfly*, the wings on one side being male, and those on the other side female, the latter, contrary to the usual style of colouring, being marked with a patch of splendid purple, of which the males are destitute; also specimens of a new and large species of *Scolytus*, taken by Mr. Weaver, in Scotland, from the trunks of Birch-trees; it closely resembles the common Elm-destroying species, but is rather larger.

Mr. Foxcroft sent for exhibition a number of Moths and other insects, which he had captured in Scotland, including *Phibalapteryx lapidana*, *Leptogramma Scotana*, *Depressaria Coniflonella*, &c.

Mr. Douglas exhibited a new British *Crambus*, hitherto only known as a native of Italy; also a new *Nepticula* (a genus of minute moths), reared by Mr. Weaver, in Perthshire, from the *Vaccinium Vitis idæa*; and a specimen of the rare little Beetle, *Dictyopterus minutus*, taken in the fence at Addington, on the 17th September.

Mr. Stainton exhibited a number of leaves of various trees, including the Oak, Rose, Whitethorn, Buckthorn, &c., infested by the larvæ of different species of *Nepticula*, which mine between the two surfaces of the leaf; also Hawthorn leaves, similarly mined by the larvæ of

a very minute species of Weevil (*Ramphus pulicarius*). The larva, which is scarcely larger than a pin's head, bears a striking resemblance to a minute Trilobite.

Mr. Westwood gave a short account of some seeds from Mexico, which were remarkable for executing a series of small jumps or leaps, and which was produced by the movements of some small larvæ within the seeds. These larvæ have proved, upon examination, to be those of a small species of Moth, one being inclosed within each seed, and being themselves attacked by a small Ichneumon parasite, belonging to the genus *Sigalphus*. The seeds had been described by Sir W. Hooker (who had handed them over to Mr. Westwood) in this month's number of the "Journal of Botany." They are natives of the western parts of tropical America, but the plant from which they sprung has not been determined.

The Secretary read a notice from the Journal of the Society of Arts, concerning various instances of the successful introduction of the Eria Silkworm (from India) into Malta, but still regretting the want of a successful mode of unwinding the strongly cemented layers of silk. The Moth is the *Gallirnia Cynthia*, and it feeds upon the Castor-oil plant. Mr. W. W. Saunders stated that Dr. Chavennes had discovered a plan of unwinding similar closely-cemented silk cocoons.

Mr. Douglas read a translation of Professor Zellers memoir, describing the curious habits of a small Moth, *Grapholetha Corollana*, a continental species, which would probably be detected in this country, now that its habits were detailed.

Mr. Stainton read a notice on the habits of the larvæ of *Elachesta*, a genus of minute Moth, which mine within the leaves of various kinds of grasses; and upon the history of a very curious species observed by Riville a hundred years since, upon the Vine, and which is very similar in its details to those of a species observed by Mr. Stainton upon the Buckthorn, the larvæ of which resides in a flat, moveable case, formed of two pieces of the leaves of the Buckthorn fastened together.

RENOVATION OF SHRUBBERIES.

ALTHOUGH the term Shrubbery has almost become obsolete, through the much-improved modern style of planting in masses, yet, in most gardens, such a screen is to be met with; and, indeed, in many cases, is of much importance. In order to be rightly understood, I may explain what kind of planting I would wish to include under this head for the present purpose; and it is those screens, or belts, which are considered necessary in most places to shut out unpleasant views, to afford shelter, and also to give an air of privacy to the walks, even something of seclusion; for Englishmen do not like to be stared at by every one in their private retreats.

Shrubberies, of course, are composed of a mixture of trees, evergreens, and deciduous shrubs; the design of planters being, generally, to establish permanently three heights, at least, and such would seem to be absolutely essential; not for variety's sake only, but also to produce a good sky, as well as ground, outline, and in order to admit as varied a collection of trees and

shrubs as the circumstances of the case will admit. Not unfrequently, these Shrubberies are planted by contract, and, in some such cases, a profusion of common-place shrubs and evergreens find a place there. All this may naturally be expected; for it cannot be supposed that nurserymen, with a cramped contract, can afford to furnish the novelties of the day, or even a superior class of evergreens, unless the contract is made roomy enough, and these things are perfectly understood. Such being the case, after the lapse of a few years, this Shrubbery, which at first looked so prim and so map-like, becomes rude and disorderly; the inferior shrubs growing at double the pace of their delicate neighbours, begin to elbow them most severely; and it speedily occurs, that the latter not only become lean and attenuated, but meagre and unseemly in outline, and, unless measures be taken to relieve them, extermination, in many cases, is the result.

Another point; the trees, in many cases, are planted too thick by far for a permanency; many fast-growing deciduous trees are very properly introduced, in order to obtain what is called immediate effect; and such trees as the Poplars, Limes, Elms, &c., although accomplishing that purpose, very soon serve the grosser shrubs quite as bad as they had served their weaker neighbours, and, in their turn, the shrubs progressively become poor, straggling, and drawn; and thus, by degrees, the ground-line becomes deserted, and, from exhibiting decaying foliage and other exuviae, not unfrequently carries the appearance of a mere rubbish-ground. This is no overdrawn picture; many of our readers can, doubtless, attest to the fact, although many others, we feel assured, are happily ignorant of such unpleasant results.

Shrubberies, of whatever kind, indeed, should have periodical examinations, say once in three years, at least, but there are other things which require even more frequent attention; and I may here be permitted to point to a few necessary proceedings in overgrown and neglected Shrubberies.

Perhaps no period is more opportune for this dressing than the month of October, or early in November. The days are still of length sufficient to despatch much business without serious impediments through stress of weather; all pressure of ordinary gardening business is at this period at the minimum point; and, moreover, as planting or rearranging generally becomes necessary after thinning, &c., the period is altogether very suitable.

In these proceedings, the bill-hook and hand-saw are not unfrequently called into requisition. The first thing, of course, is to remove all unnecessary timber-trees, and here much judgment and caution are requisite. Not only the securing a necessary amount of shelter, and even shade is necessary, but an eye must be had to what is termed the sky-line, as to the principal points of view, the first of which is, of course, the drawing-room or parlour-windows; and after that, seats or principal points of view in the grounds. But there is one other point of even paramount importance, viz., the exclusion of unpleasant objects, and a due attention to this very frequently becomes the prime consideration with the improver, especially in suburban residences. However, in the midst of all these considerations, I would not have our readers possessed with the "tree mania;" that is to say, so fond of everything in the shape of a tree, as to be ready in the language of a popular song to cry out—"Touch not a single bough."

Let such remember that the mere exclusion of a factory chimney, or a cottage betokening poverty, is ill-accomplished in small gardens, if naked shrubberies, with rows of Pea-stakes must be the result.

Having well determined, then, what course trees *must* give way, the axe should be at once applied, and before any rearrangement of shrubs take place, the trunks,

brush-wood, and all, should be entirely removed, and by all means the roots and bole; it frequently becomes necessary to plant evergreens or shrubs at the very station occupied by the tree. It must be remembered here, that as trees of importance to be reserved, the Beech holds a conspicuous position; for although a great enemy, root and branch, to the welfare of the evergreens growing beneath, it is of considerable use to lean belts, in moderate-sized gardens, as retaining much foliage through the winter, and if the lower branches injure the shrubs, they should be kept cut away, not being required, like a Birch on a lawn, to sweep downwards. The Birch, too, is valuable in this sky-outline; its graceful, dangling branches much relieve the hardness of outline in other trees, whilst its silvery trunk becomes of itself a distinct feature in the scenery. The Plane is a noble tree on account of its foliage, and the Tulip-tree, when of some size, ranks with it. Such trees as the Acacias, the Ailanthus, Sumachs, &c., of the pinnate-leaved character, must be well preserved on account of their peculiar expression. However, I need not enlarge here on this head; space will not permit, and most of our readers by this time, doubtless, are familiar with most of our deciduous trees.

I must here advert to another prime consideration, the careful preservation, as a general principle, of evergreen trees, such as Conifers, Ilexes, Hollies, &c. So many have been the important additions made to this class of landscape adorners within the last few years, that there is little necessity to resort to deciduous trees; still, however, remembering, that in summer the light, airy, and umbrageous foliage of the latter imparts a grace and freshness which we seek for in vain in the Conifer; nevertheless, it is of the utmost importance, that in screens of this kind evergreens both of trees and shrubs preponderate.

The trees, then, being thinned where necessary, and all about them removed from the spot, the improver may cast his eyes on the shrubs below. And here he will find more scope still for his selecting powers, if the shrubbery, belt, or screen, contain many specimens. Here, again, may appear a repetition of the evils referred to as concerning the trees; coarse, rambling shrubs, were of much service as producing speedy effect, now crushing their delicate compeers, which boast a higher pedigree; or, rather, higher associations in the mind.

Where these things crowd, and a derangement of the style intended is obvious, selection must be the order of the day; and the bill-hook and spade may divide the earnings between them. The judicious improver now takes a glance over the other parts of the grounds, in order to see if these coarse and despised materials may not prove worthy of a better fate than the rubbish-yard or wood-stack, and, not unfrequently, situations are found where the despised ones will receive a hearty welcome.

Amongst ordinary shrubs, &c., which are apt to press too severely on the best and permanent plants in shrubberies, may be named such as Privet, and shrubs of similar growth; many of these straggling and suffocating sprouts are stuck in with a liberal hand in new shrubberies, especially if contract-work; a moderate use of these, nevertheless, being not only justifiable, but commendable, for ready-effects' sake.

And here two principles contend for the mastery in the selection; the one, natural grouping, marked by an accidentally happy association of forms, tints, &c.; the other, richness and variety in detail; the former, however, has reference chiefly to the shrubberies or screens of extensive grounds; the latter rises in importance with the severity of the limitation. However, as to suburban residences, warmth of clothing and privacy assume leviathan proportions, and in many cases there is little chance or desire for any exercise of the taste and skill of the genuine landscape gardener. The limits of a single

paper preclude the possibility of indulging in a broader glance at the subject; so for the present I will pass on to routine proceedings.

At any rate, as a first procedure, all inferior shrubs which are pressing on or injuring fine evergreens or choice shrubs, must receive a handling. Where they do not press too heavy, and a tolerably thick screen is desirable, it will suffice to remove those portions which cause real injury by the bill-hook or knife; and in doing this, let not the operator proceed as though he were clipping a hedge, reducing every thing to mere formality; rather let him remove whole branches, so as to leave the shrub in a balanced condition as to its volume:—after that, the more irregular the outline, if not absolutely straggling, the better.

It is somewhat unfortunate that the effect of this compact mode of dubbing shrubs is not better understood amongst those who are generally employed about the limited gardens of suburban residences, where every effort should be made to increase the apparent extent; and this, in the matter before us, is best accomplished by promoting intricacy of outline, whether in the ground or sky line.

Of course, some shrubs, under the circumstances here alluded to, will require either removal or rearrangement. This, then, is the next step; and here I suggest that the immense importance of permanent evergreens be taken fully into consideration, more especially in proportion as the grounds are limited. In most shrubberies, even those of some extent, I think that the evergreens should be as two to one of deciduous things, but in the limited shrubbery of the suburban villa, perhaps as three to one. I may now suppose that everything improper has been removed, and that the improver is about to proceed with the removal, first, of a few *large evergreens*, in order to supply the blanks created by the removal of the coarser trees or shrubs, for this should be the first proceeding.

We have many devices, in these times, to promote successful transplantation, but some of these require costly machinery, and a vast amount of labour, and are, in the main, only within reach of the possessors of vast estates; and I do not feel it a duty to shape my advice to millionaires, for although much on the increase, they are still in a considerable minority. A few maxims, simple, and tolerably inexpensive, are necessary to be observed by everyone, and they may be stated as follows:—

Take care that due preparation is made for the reception of the subject.

Choose, if possible, a cloudy day, with a humid state of air.

In removal, pay more heed to abundance of well-preserved roots, than to obtaining a huge ball of earth.

See that the roots are not dry a moment, from the commencement of removal, until the planting is complete.

Some more might be added, but these are the chief considerations.

Let me here advise that very roomy holes be made, and that they receive a few inches of the rakings of the shrubbery in the bottom; that the ball or fibres be set on this, and that when the soil is filled up, barely as high as the collar, a thorough soaking of water be given; this may settle for a day or two, and then the remaining soil be added; thus managed, there is little occasion for treading the soil.

R. ERRINGTON.

THE CRYSTAL PALACE.

(Continued from page 15.)

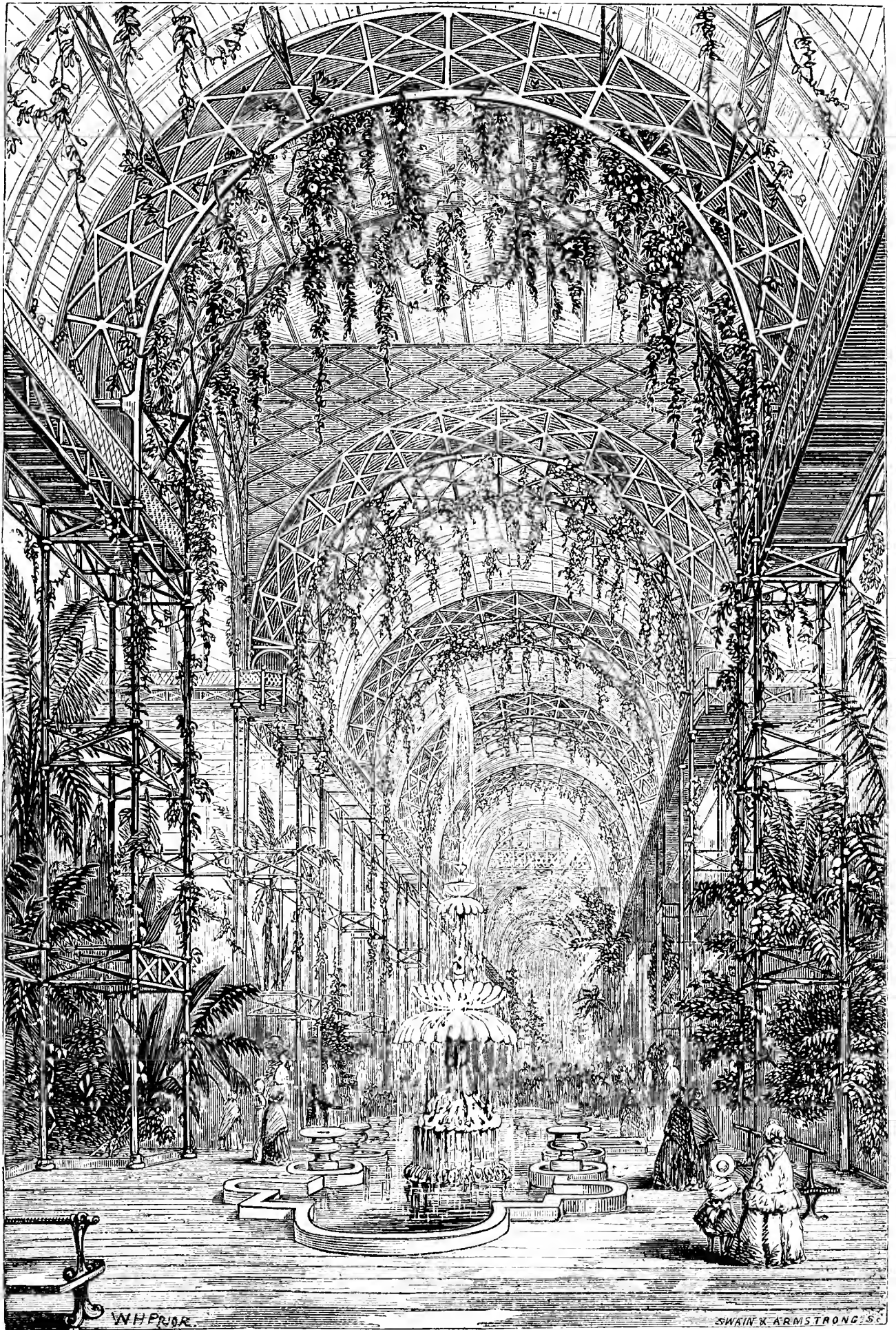
HERE is a view along the nave of the Crystal Palace, taken from the west end, in front of the "Screen of the

Kings and Queens of England;" the Crystal Fountain is playing in the foreground, but the trees and climbers, as they are seen in this view, are merely ideal, but they show what is intended to be the conservatory fashion of the inside in a few years. Here a greater problem than that of ascertaining how far hot-water will circulate in pipes will be solved, namely, how far the successful cultivation of stove, half-stove and conservatory climbers and large plants and trees, can be carried in an atmosphere sufficiently dry for the rest of the inimitable contents of the Palace.

The "London press" has already carried the question of the circulation, or rather the difficulties of getting water to run such great lengths, to an absurdity, such as the gardening press was loaded with in 1826-7 and 8, but practice had settled that question many years before a Crystal Palace was thought of. The only question about hot-water, which remains to be solved by the experience of the Crystal Palace, is the *quantity* of hot-water, below the boiling point, which will be sufficient to keep the different parts of the Palace up to the necessary degree of warmth during our coldest winters, and that exact quantity can only be determined by experiment on the spot. No doubt, a good guess has been already made of this quantity, under present arrangement, and if it should be found not to be near the mark, provision is made for any additional quantity of water that may be required, by "an ingenious contrivance," that will admit of as many extra pipes as will do the work with ease. Fifty miles of twelve-inch pipes, or an equivalent thereto, are already laid down, but should ten or twenty miles of additional piping be required, the extra force that would thus be thrown on the present propelling power is too small to be measured by the ordinary rules for calculating forces. The force required for propelling all this water in all those pipes, as "force" is understood by the great bulk of mankind, would not knock down a child in the street; in other words, there is neither force nor propulsion in the circulation of hot-water at all. What is it which propels or forces a feather to rise in the air, against the pressure of the atmosphere? The answer to that question explains the degree of force or no force which circulates the water in those pipes. If there is one question in gardening which requires explaining more than another to the great bulk of amateurs, it is this one on the "power" of boilers to "force" water all round a house or pit.

Amateurs take their notions of "hot-water" from the steam boiler, and if you tell them that the two systems are as different as the Poles are asunder, they shake their heads incredulously. If you say, in addition, that circulation by hot-water is as instantaneous as messages along the electric wires, they put you down as stark mad; yet it is so in reality, and there is no doubt about it. The best way to explain this, however, is the following:—Suppose a hot-water boiler in Glasgow for heating the Houses of Parliament, with a flow and return pipes all the way to and from London;—fill the whole with water, light your fire, and when the first thimbleful of water at the bottom of the boiler is hotter than the rest, set on the telegraph to London, and *before* the message reaches the office, your own circle is finished in Glasgow. There is not a particle of *force* required in this; the instant a spoonful of water is heated at the bottom of the boiler, it rises higher in the boiler, because hot-water is lighter than cold water, and quick as electricity itself; the space left by the rising water is filled up with the cold water next to it; from a spoonful to a gallon, and from a gallon to the last drop in the apparatus, the same law governs the whole without any force whatever.

The question, how far it may be possible to cultivate certain plants in the Crystal Palace, without saturating



W. H. PRIOR.

SWAIN & ARMSTRONG, SC.

the air to such a degree as would hurt the most delicate work of art within it, is yet, however, to be learned by direct experiment in the Palace itself.

If you have been accustomed to learn plants from pictures only, you must conclude that those in the front of our view are Palm-trees; but they are not so, the Palms are at the further end of the building. What look like Palms in this view are the Norfolk Island Pine (*Araucaria excelsa*), which grows above one hundred feet high; and I can assure you, that there is not one of them in those islands, or in this country, which can look healthier than many of them that are now in the Crystal Palace. One of them, a large tree, about which they must have entertained some misgivings at the time it was planted, they had covered with moss along the main trunk and larger branches, such as I reported last year as having been done with large shrubs at Shrubland Park, by Mr. Davidson. This has had the desired effect; the tree suffered severely by the transplanting, but now it is past all danger, and looking remarkably well. They would have lost it, certainly, were it not for the covering of moss, which they kept moist for a long time; this, therefore, may be considered as an established fact, and ought to be kept in mind when one has to deal with large trees or shrubs, with which a sufficiency of roots cannot be had when they are transplanted; the heat and glare in the Crystal Palace, last spring, was enough to kill any large tree with bad roots, and one of the Conifers in particular, but the covering of moss, kept wet, saved it.

There are, in garden language, "conservatory beds" along both sides of the nave the whole length of the Palace, besides the groups of beds, banks, and ridges, at the west end, for illustrating the natural history of man and animals; together with eight flower-garden beds round the Crystal and Bronze Fountains at either end of the building. Some of those round the basin of the Crystal Fountain are seen in our accompanying view, and all these beds are brimful of plants in the most healthy condition from end to end, except the Egyptian Palms (*Phoenix dactylifera*), and they are leafless yet. The steamer in which they came over was pressed into the transport service to Turkey, and this delay, I fear, has all but killed these beautiful Palms; but let us hope not, for the Palm races are very tenacious of life, and there is yet great substance in the naked trunks, which are enveloped in moss—they are in good soil, and the situation could not be better.

The principal plants in those beds representing the temperate regions are tree *Rhododendrons*, and the best *Rhododendron* hybrids, with *Camellias*. All these will give a blaze of flowers through the winter; but among them is a mixture of all our best conservatory plants and climbers, which, in time, will cover every space of the airy roofs:—of them, more hereafter. It is astonishing how well this large collection of plants, from so many places, look the first year; but more so, that beds of *Tom Thumb*, edgings of little blue *Lobelia*s, and open-air-bed mixtures of most of the popular tribes, should flourish round the basins in the centre, and in the height of summer, without any signs of being "drawn," or want of free flowering. We must lay all these advantages to the credit of so much light, and such a large volume of pure air in constant motion. The first day that I was there was very hot, and little or no air in the open air; but there was a good draught in the galleries, and the thermometer was six degrees lower in the second gallery than in the open air at Surbiton; the draught made all the difference. People hereabouts thought I was mad, or else had more money than wit, when I built my cottages, in 1852, and made an extra room between each pair of kitchens, which projected to the south, beyond the line of the building, by facing the

openings between two wings with upright glass, and a span-roof of glass over, to correspond with the slate roofs on either side. So much glass to inclose such small spaces, they said, would soon roast dinners and cooks without any fire at all; and one of my tenants had actually a clause inserted into his agreement, that the roof of his back-kitchen should be taken down, if the woman could not stand to wash the dishes, for the heat. Now, however, these very women shut the doors of my Wardian cases, in hot weather, to keep themselves cool; we having ascertained, meantime, that, generally, there are from nine to twelve degrees of difference between the heat inside and that out in the garden in front, the inside being the coolest, and that entirely by a simple move for causing a rapid current at the roof, immediately under the glass; and I maintain, that the inside of a large glass globe might be made cooler than the open air just in the same way; and Sir Joseph Paxton has managed to do the same in the Crystal Palace.

The way I did it, was simply to leave an open space under the eaves of the roof, at both ends, and, like the force in the hot-water system, the moment a particle of air is heated above the rest, up it is, and is caught in the current, and a cooler particle takes the place of it. By inverting the process, I have before now kept the top part of a cool plant-house hot enough to grow stove plants, and the same may be done for stove-climbers in the Crystal Palace, without prejudice to the plants below; but that does not meet the only difficulty which appears to me must be got over in the Crystal Palace—that of having sufficient moisture in the air where the air plants stand without doing harm to other things. In short, without making a "court" for *Orchids*, and a few other tribes, on the principle of a Wardian case, in the Crystal Palace, these plants cannot possibly be grown there at all.

Seeing the ventilation so complete, and so thoroughly under control, I am sure that all other plants, with few exceptions, will be found to grow and bloom better in the Crystal Palace than in any conservatory whatever, and my old hobby of flowering stove-climbers along the roofs of cooler houses will have a better chance there than it ever had before. I see no impediment to the progress of such climbers as *Bignonia venusta* and *Chamberlaynii*, *Combretum purpureum* and *grandiflorum*, *Stephanotis floribunda*, and *Henfraya scandens*, and many more of the like nature, alongside of the common *Passion-flower* and *Tarsonia*. Indeed, I noticed there a more curious combination of half-hardy and stove plants than these—a noble pair of the Elephant's-foot plant, from Africa (*Testudinaria elephantipes*), which is all but hardy in England, growing with tropical Palms. These are the most curious of all the plants at the Crystal Palace, and every lady should look out for them; they stand at the entrance of the "Egyptian Court," and look like huge blocks of wood covered with a rough bark, which cracks in all directions, or seems to crack; the whole body of the plant inside that rough bark is just as like the inside of a Turnip as can be, and as full of juice as a Beurre Pear. A plant of this nearly ripened seeds against an open wall, at Shrubland Park, in 1848, and was much stronger and healthier in the stems and leaves than another which was kept in-doors. There are more than a hundred *Orange-trees*, once the property of Louis Philippe, King of France, many of them most noble specimens, but the greater part of them must have been in very bad health when they left France, and they are not yet quite recovered. Some large *Pomegranates*, however, have made noble heads this season, and were coming into flower by the end of August; next year they ought to ripen fruit. After them comes a number of middle-sized standards, of the *Sweet Bay*, their heads being kept close by pruning;

the Bay ought to be as common as a standard in this country as the Myrtle or Orange, but we are only beginning them.

There is not another evergreen shrub, however, which will bear equal hardships with it in transplanting; and a thousand standards of them might easily be made this next winter from English shrubberies, without being missed, of standard *Myrtles*. I saw none worth speaking of at all round the place. Here I would earnestly press on the notice of our liberal patrons to spare a standard, or a specimen plant of some kind or another, from every corner of their establishments; and just now is the time. Of what use is it to cram and squeeze so many large plants as half the gardening world manage to crowd together for the winter, and every winter since the last war? How much better would it be to burn the one half of them, or give them away as useful presents to the Crystal Palace Company, and allow sufficient room for the rest to look as if some one really cared anything about them. Large *Myrtles*, in particular, would be very acceptable; next to them, *Acacias*, or any Cape or Australian plant of that style and habit. I saw several plants marked as "presented" by so and so to the Company, and that is all my clue for urging my suggestion; I have not had intercourse with a single individual belonging to the managing of the Crystal Palace, or in their pay, to this day—except a couple of hours with Sir Joseph Paxton himself, eighteen months since, and we hardly spoke of the place then; but I am gardener enough, and old enough, to know, that they would not "look a gift plant in the corolla," seeing what they have already accomplished by their own means.

But the best proof, to a gardener, of the capabilities of the Crystal Palace for growing plants remains to be told; I mean the aerial vases, or hanging baskets, of which there are three hundred in a double row, one a little higher than the other, along both sides of the nave and round the transepts. The baskets are all of one size and shape, something similar to a flower-vase—wide in the mouth, and hence rapidly narrowing to the bottom. They may be nearly four feet across, and from twelve to eighteen inches deep in the centre. The plants in them are such as would soonest tell of confinement, and of too much, or too little, of anything necessary to their well-being; the only thing I could see against them was, that they were too well off, and, as often happens with gardeners themselves, they did not seem to know it, nor make equitable returns for the indulgence; the soil was too good for them, and the water not being wanted for the fountains this season, they had more than their share of it; the natural consequence is over luxuriance, and not quite so many flowers as would come under a less sparing treatment.

Many of the thousands who admire these hanging baskets think the plants in them grow just as they please. The case is very different, however; for they are as regularly arranged and trained as pot-plants ever were; not one of those climbers would luxuriate so careless-like and so gracefully—feeling their way into space, as it were—if they could but help it. That old *Cobaea* would as soon thrust its tendrils into the very jaws of the British Lion, as lean an inch from the perpendicular, if it were not trained to do so, as you see it. The same may be said of all the *Tropaeolums*, *Hebe-mocarpus*, *Mauandias*, *Lophospermums*, and the white and purple *Ivy-leaved Geraniums*, which are the chief of the climbers in use in the baskets. The rest are of *Scarlet Geraniums*, *Pelargoniums*, *Calceolarias*, *Petunias*, *Verbenas*, *Fuchsias*, and the old window *Begonia Evanescens*. The greenhouse and stove climbers which are planted in the beds are not yet forward enough for any remark.

D. BEATON.

NOTES AND GLEANINGS FROM ALTHORPE HALL.

THIS fine old place is situated about six miles north-west from Northampton, and something of a similar distance, but eastwards, from Weedon. The chief approach has its terminations eastward and westward the former, or that nearest Northampton, having beautiful gates. Near the centre of the approach, as respects its length, and a short distance north from it, is situated the mansion. Nearer the approach, near to and westward from the house, are situated the stables and offices, the bold pillars and massive archway of the entrance presenting a striking contrast to the rigid simplicity of the architecture of the mansion. The position of the mansion is low, perhaps the very lowest in the large park, the ground all around, unless immediately on the west side, swelling into heights, and waving and undulating in a beautiful manner. On the east side of the mansion, and extending northwards, are situated the flower-gardens and pleasure-grounds, to which I will presently refer. Westward of the house, and near the stables, is a rather deep cutting in the approach, that has removed a steep hill that must have been both inconvenient and dangerous, and so managed that the fine large trees which grew in avenue-form by its sides have received no injury, while the green, steep sides of the cutting present an interesting appearance. If a little farther from the house, or with scenery a little more wild, masses of the common bracken would have produced a fine effect on these sides. Even as it is, a sudden contrast would be pleasing. South-west from this cutting is situated a sort of park-farm steading, or rather, a number of offices, and, among others, the gas-works, required for such a large establishment. Farther south-west still, but on a much higher position than the mansion, are situated the kitchen-garden and orchard of thirteen acres, with a beautiful commodious *cottage ornee*, as a gardener's house, near the north-west corner, now tenanted so worthily by my friend, Mr. Judd. The houses and pits chiefly used for early forcing are close to the gardener's house. I have already indicated that the mansion stands almost in the centre of the park as respects its eastern and western boundaries, and a stranger might think it did so as respects the northern and southern extremities, the park extending chiefly in these directions, apparently fully five hundred acres in size; the northern side being chiefly distinguished for the gradual rising of the ground, and the south for its more abrupt and varied elevations and undulations, and all adorned with splendid timber, whether in the shape of vigorous young plantations, or those elegant groups of fine old specimens that throw the diversified surface of the park into beautiful light and shade.

Among these trees and scenery I spent the greater part of the 20th of September, preferring their society, though the day was rather unfavourable as respects the weeping from the clouds in the morning, to the splendid library, picture-gallery, and other show parts of the house, that the noble proprietor liberally opens for the inspection of visitors. From its low position, and the size of the park, no external scenery is seen from the mansion, with the exception of a peep at a fine cluster of ornamental cottages obtained from the west side—cottages erected for the deserving poor by the self-denying generosity of the late Countess Spencer. To a certain extent on the north, but more especially to the west, a champaign open space of green turf comes right up to the mansion, affording thus a fine opportunity for viewing and studying from the windows the romps, eccentricities, and distinctive peculiarities of our various useful and domesticated animals.

A walk through the beautiful park tells us at once, that the love of trees, as well as of animals, has been

hereditary for generations. Here we pass through a plantation of Oaks of some five-and-twenty summers, that we imagine to be ten or fifteen years older; and there we get among noble specimens, the remains of a similar plantation, inserted by a tree-loving ancestor, nearly three hundred years ago. This, of itself, would produce a variety in the woodland scenery; greatly increased when, as in the present case, no one system of planting has been adhered to, and the ground is so nicely diversified and undulated. Not far from Mr. Judd's cottage, we get into one of these young plantations, the height and straightness of which rather astonish us. There seems to be little proofs of early pruning; and I attribute their mounting upwards as straight as lines chiefly to two causes: first, their standing thick at first, prevents the side-branches extending, or they drop off before they are of any size; and, secondly, there would appear to be here, and in other places, such as Middleton House, the Earl of Jersey's, where the trees of all kinds grow very upright and straight, a peculiar density in the atmosphere, which, taken in connection with the vital powers of extension, may greatly promote this straight, upward tendency. If there should be anything in this latter idea, the close-planting would also seem to be somewhat necessary; as fine specimens of old Oaks are scattered singly, or thinly, in groups, second to but few or none in England, for size in diameter of bole; but having, as such trees generally have, large, extended heads, with the main bole divided into many secondary arms. For procuring, not fine-headed specimens, for park scenery, but good, valuable timber, concentrated in one trunk, that proves "its value at the sale and the saw-pit," there seems to be yet a spice of truth in the old adage, that advises, "to plant thick, and then quick."

Crossing the approach, and nearing the north-west boundary of the park, we enter a beautiful avenue of trees, many of which are of large dimensions. A door in the boundary-wall is opened, a beautiful walk is before you, shaded with an avenue of young trees, leading westwards towards the village church. How solemnizing such scenes of natural beauty must be to the reflecting mind! Would that there was more reflection, and there would be more solemnity where most demanded. Proceeding onwards, the old avenue ends, and a young plantation begins, where, apparently, an old one had stood, the remains of which are called the *Heronry*. I wish I could have measured the height of these noble Oaks on which the Herons build their nests. I question if there are any more lofty to be easily seen, and then such boles—straight as an arrow from base to summit. Proceeding eastward, near the northern boundary we pass through fine germs of Oaks, not yet arrived at the standard of those in the *Heronry*, though fine trees, and planted, as commemorative stones testify, about two hundred years ago. We presently come in a line with the mansion, and the avenue-style is again introduced, slightly broken with out-jutting groups. Passing a large enclosure, suitable for kennel and menagerie, we turn to the south, pass the east side of the pleasure-ground, cross the approach, and get on the rising grounds to the south and north of *Harlestone*, where there are many splendid single specimens of Thorns, and many young Limes, and other trees in single specimens, with the browsing line as the base, and the heads as fine specimens of a flattened cone as if they were regularly pruned all over twice a year. From this elevated plateau, a fine view is obtained of two Gothic arches to the eastward, standing separately and solitarily in their ruined grandeur, the remains of the once proud castle of Holmeby, or Holdenby, where, after the decisive battle of Nazeby, his flight from Oxford, and his surrender to the Scottish army, Charles the First was sent to reside by the English

parliament, more as a prisoner than a king. With many things to love and admire, a thorough disregard of truthfulness was the ruin and the bane of that unfortunate, but unmartyred monarch. What a lesson do these ruins preach to our rising race, ever to be sincere and true! What a homily do they present, as to the ultimate destiny of all despotism!

Getting back to Mr. Judd's cottage, we then catch a sight of the parish church, situated on an eminence to the north-east, with grass, trees, and shrubs fringing the foreground, and the valley lying between,—the most beautiful and picturesque view of scenery we obtained from the whole demesne, and which, the removal of a few branches will bring within the sweep of the windows of the cottage. An idea of the splendid timber contained in this noble park may be gained from the fact, that an Oak tree, blown down some years ago, realized, within a fraction, £300; nearly a third of that amount, £90, being procured for the bark alone.

PLEASURE GROUNDS.—Our readers will now be enabled to form some idea of this demesne. The south or entrance front of the mansion resembles the lower part of the letter **H**, the entrance being in the centre. Fill up the upper part of the **H**, and you have the block of buildings before you. The whole of the north side, and about half of the west side on the ground-floor, are appropriated to the library. A new wing has been lately added at the north-east corner, as an extension of the library, thus giving the pile three legs or wings of the **H**. As far as I recollect, this low wing is in a different style from the rest of the building; and for convenience inside there is no window on the east side, next the pleasure ground, which gives it there a dull dead-wall appearance, which might so far be easily remedied by fixing in the wall a window or windows of fluted or ground glass. I should look over any want of unity in style as respects this north-east wing, if the other leg to the **H** was put on at the north-west corner, in the shape of a nice architectural conservatory, communicating with the library. This, no doubt, will some day be done, and the space thus enclosed would constitute a piece of fine, green, level lawn, with a few upright shrubs, or a geometric flower-garden, in the old English or Italian style.

The mansion, in ancient times, had been surrounded by a moat, with its attendant drawbridges, and other sources of defence. As times got more peaceful the moat was dispensed with, but the water, fed by a brisk running rivulet, had been directed to the supplying various pools and lakes in the pleasure-grounds. These, with such a supply of water as to keep them in active motion, would have been great objects of interest and beauty; but the limited supply transformed them into so many receptacles of malarian diseases, that few strangers could visit Althorpe without contracting severe colds and other ailments. The present noble proprietor has had the waters of this rivulet conveyed through the grounds by means of a deep culvert, and has had the whole of the lakes or reservoirs emptied and drained. In improving one of these operations, Mr. Judd confirmed me in a rather unfortunate idea, namely, that we have much to learn and unlearn about draining. Before some of these reservoirs could be rendered dry it was necessary to have drains twenty feet deep. It was generally supposed that less than the third of that depth would have been amply sufficient. Part of these lakes are levelled, and now form part of the lawn; others are merely left in a scolloped, undulating form, especially when contiguous to fine groups and avenues of trees, and are planted thickly with the common Laurel, designed to be kept in a dwarf, green, carpet-like form; and what seems to have been the central lake in the pleasure-ground has a walk round it as before, and is planted with groups of the commoner

Rhododendrons, which are thriving well, and on which Mr. Judd intends grafting, or inarching, the finer kinds, when the present plants have gained more strength. From these means, and a thorough system of drainage for the house, &c., with the means of flushing at command, the several drains being all properly trapped, and conveyed away by a culvert, which terminates in a large trapped reservoir before emptying itself into the rivulet beyond the grounds, much has been done to increase the salubrity of the place, and fine, green lawns, and green sweeps of Lanreels, and large masses of Rhododendrons, will, no doubt, look better than stagnant water, with its usual attendants of offensive mud and vegetable matter, and strong weeds, almost bidding defiance to the person who attempted to exterminate them. Water, however, lends such a charm to rural scenery, and might be so naturally expected in such a position as Althorpe, that the drying of the whole of the lakes could only be justified in a picturesque court of justice, on the stern plea of necessity and salubrity. Even now, if ever deemed desirable, a small piece of water could easily be formed, and the rivulet having much less to do would keep it in brisker motion, while the mode of draining would preserve it comparatively from gross impurities.

These changes have placed the pleasure-grounds in a state of transition, open to the expression of opinion and inviting criticism. One or two celebrated landscape gardeners have been consulted, but what little had been done by their advice is again undone, so that a fair field is presented for our competition; and I shall endeavour to be so plain that every reader, young ones especially, shall have the means of judging of the propriety, or impropriety, of my conclusions.

From about the centre of the east side of the mansion, a wall runs eastward, its south side being occupied with low-roofed sheds and offices, and its north side with creepers, and an arched walk, supplied with flowering Creepers, Roses, &c. A gate in this low wall admits the stranger and the workman into the pleasure-ground. Turning towards the house, you see a beautiful flower-garden, grouped, the clumps edged with box, and narrow gravel-walks between, the centre of the flower-garden being opposite the door-way that leads to some of the principal living apartments on that side of the mansion. The beds were beautifully filled with our best grouping plants, and if an improvement could be effected, it would be by the removing of a central clump of the best Roses, and filling it with a bedding-plant; as, however beautiful these Roses may be, it is seldom that they can be made to harmonize with other gay bedding-plants in the autumn. Beautiful as this garden is, there is something unsatisfactory whenever you look beyond it. To the north there is a large extent of lawn, without a shrub or tree to relieve the flaming colours as a background. To the north-west, your eye passing the iron fence, traverses the champaign slopes of the park. You turn and look to the north-east, where, some three or four hundred yards off, we see signs of pleasure-ground scenery, and there another large group of bedding-plants bursts upon vision, without any apparent means for getting at them, except walking across the lawn. Now, in the case of two such fine groups at such a distance from each other, many would contend, that by no means should these be seen at once; and an eminent landscape gardener seemed to be so much of this opinion, that he advised shutting in the garden near the house with a Yew hedge; the place where the hedge actually stood, or was to stand, being still apparent, from the rich verdure of the grass. We should have little faith in the beauty of such a fence in such circumstances. We would not contend, that in no circumstances should two such large groups of flowers at such a distance be seen together, but if we did, we would intercept the view by single specimens and

groups of shrubs; but we would contend, that if seen, a mode of access should also be seen, and a connecting link apparent. We get more convinced of this, as, standing close to the mansion, we look upon this favourite flower-garden, and then turning to the north, glance over the fineavenued lines of splendid trees.

Round the mansion there is a stone pavement of about six or seven feet in width, and to this the lawn and this flower-garden come up. Passing the new wing on this garden-front, the pavement terminates in a walk of gravel of similar width, winding northwards close to the iron fence that forms the boundary between the park and pleasure-ground, until bending eastwards, it passes a beautiful avenue in the park, with a narrow walk, leading north, to the Keeper's and kennels; and ere long, a splendid Lime-avenue in the pleasure-grounds, with a wide walk between the rows of trees; this walk also lying north and south; and then, keeping on the walk on which you started from the mansion, you are brought to the large group of bedding-plants, with the purple *Zelinda* Dahlia for a centre, that altogether showed so conspicuously at such a distance from the house. Now, the straight lines of the building, and the straight lines in these avenues, should be held of first import in the arrangements of the walks and grounds. On this principle, the forming of the walk in a circular direction was a mistake. If the large walk at the Lime-avenues was to be maintained at its present width, then, the narrowness of the main walk leading to it from the house, and leading onwards, would hardly be in unison. Then, the walk itself being so near the boundary, always conveys the idea of want of space, and deprives the pleasure-grounds of that privacy so desirable in such large establishments.

The stone pavement is altogether too narrow for walking-room at the garden-front of such a mansion; it would require to be three times as wide, or remain as it is, with at least a twelve-foot walk in front of it. This should extend as far, and no farther, northward, than the gate in the boundary-fence, close to the new wing. This would break in upon the flower-garden, for which the proprietors have a particular regard; but if all taken up, Mr. Judd would soon lay it down again farther eastward,—alike to the benefit of freedom of movement, and the massive dignity of the building. If the whole of this garden was sunk below the general level from eighteen inches to two feet, with steps at the two ends, a sloping bank of turf, and then a level space all round, a far better effect would be produced than by hedging it in by Yews. Sunk, or on a level, a walk should traverse, at a convenient distance, its north side, until it meets a continuation of the Elm-walk previously referred to. These I should make the leading features. I need not say, how in filling-in details, a narrow walk should branch off to the avenue that leads to the Keeper's;—how, between this walk and the fence, there should be groups of shrubs and flowers, promoting alike the ideas of extension and seclusion;—how the new walk might be ornamented with specimens of Cypress;—and how the Lime-avenue might be continued; or Deodars, or Araucarias, introduced as a continuation; but if something of this kind were done, a connecting link would at once be formed between the various parts, and a reason could be assigned for every turn and bend, and group and clump, so far as a hurried survey enabled me to form an opinion.

Though my space is getting too nearly filled, I cannot avoid chronicling, that in the pleasure-grounds north of this second flower-garden, I observed a huge raised oval, completely covered with *Mignonette*, which is intended for a Rosary, the best continuous bloomers to be planted in zones; some splendid specimens of Holly, and Hemlock Spruce, good specimens of *Pinus Douglasii*, *Sabianiana*, and *Insignis*; among other American plants,

a fine luxuriant bed of *Rhododendron hirsutum*, a most singular case of a threefold union, in what seemed to be a Lucombe Oak, the stem having separated into two divisions, joined again after a distance of some two feet, separated and joined a second and third time; and a magnificent Horse Chesnut, near to what had been the principal lake, now the *Rhododendron* ground; the diameter of the head, as near as I could make it out, being twenty-seven yards one way, and twenty-eight the opposite way, and which will be ever memorable while it carries leaf at Althorpe, as beneath its far-spreading branches the mother of the present Earl entertained the French, stationed at Northampton, in 1798.

Beneath the dense shade of the Lime and other avenues no grass would grow so as to form neat edgings to the walks; but I was told, these bare places *now* were a perfect blaze in spring with the Winter Aconite and other early-flowering bulbs. In such places, where there are no bulbs, where Laurels, however treated, are too large and rampant, a beautiful green carpet is formed all the season over by using the larger, and especially the lesser, kinds of *Vinca*, or *Periwinkle*. R. FISH.

(To be continued.)

GREENHOUSE FERNS.

(Continued from page 24.)

NOTHOCLENA.

THE Greenhouse species belonging to this genus are amongst the loveliest of the tribe; they are also like *Cheilanthes*, somewhat tender and impatient of wet over the leaves. I have found them thrive best placed on a shelf, about a foot from the glass, kept moist in summer and rather drier in winter. The soil should be rough sandy peat, and half-decayed leaves, freely mixed with silver sand.

N. DISTANS (Distant).—So called from the pinnæ being wide apart. A delicate New Holland Fern, of considerable beauty. Fronds bipinnate, or twice-cut, growing six inches long; pinnules opposite and distant; pinnæ without stems and hairy. All the stems are thickly covered with scales; seed-vessels placed on the margins of the leaves. Increased by dividing the creeping rhizoma.

N. LANUGINOSA (Woolly).—From Madeira. Fronds covered with fine, woolly hair, the underside quite brown, bipinnate, growing six inches high; the pinnæ are almost round, except the end one, which is lobed, or hollowed, as it were, into two or three parts. Seed-vessels circular, and placed at the end of the pinnæ. Increased slowly by dividing the slow-creeping root-stock.

N. VESTITA (Clothed).—A nearly hardy North American Fern. Fronds bipinnate, five inches high; pinnæ roundish, and thickly set on the mid-rib; the whole plant is densely clothed with rather long hairs, very conspicuous even to the naked eye. I have had this Fern exist through a mild winter, plunged in coal ashes, behind a low west wall; but in a very severe winter in perished. It is safe in a good greenhouse, if treated carefully. Every one of the above species are very elegant plants, and will try the skill of the best cultivator.

ONYCHIUM.

Derived from *onychion*, a little claw; divisions of the fronds resembling a claw.

I formerly grew this Fern under the name of *Ctenopteris Japonica*; it is now made a separate genus. There is only one species in cultivation, and it is a very elegant one. I find it quite hardy enough for greenhouse temperature.

O. LUCIDUM (Shining).—Native of various parts of

the East. Fronds slender, and of two kinds, fertile and barren, both forming almost a triangle; the fertile fronds grow three or four inches longer than the barren ones; the latter are a foot long, bright green, and finely divided; seed-vessels small, but when magnified may be seen in clusters between the mid-rib and the margin; when nearly ready to burst they are spread out, almost covering the underside of the pinnæ. Easily increased by dividing the creeping rhizoma.

PLATYLOMA.

From *platys*, broad, and *loma*, margin; the seed-vessels are placed broadly on the margins of the leaves. Allied to *Pteris*.

P. ATROPURPUREA (Dark purple).—Though this elegant Fern is a native of North America, it is not hardy enough to bear our winters; but thrives well in a good greenhouse. Fronds ten inches high, bipinnate; pinnæ bluntly oval, and heart-shaped at the base; the end one lengthened out; colour a purplish-green, hence the specific name; seed-vessels continued on the margin, forming a broader band than the *Pteridii*. Increased, but slowly, by dividing the slow, creeping rhizoma. A very beautiful Fern, easy to grow, and ought to be in every collection.

P. CORDATA (Heart-shaped).—A Mexican, beautiful Fern. Fronds bipinnate, delicate, and erect, growing a foot-and-a-half high; pinnæ halbert or heart-shaped, with a sharp point, beautiful light green, and hairy; stems light brown; seed-cases lance-shaped, and continued on the margin. Increased by dividing the thick, scaly, creeping root-stock. This species loses its leaves in winter and should then be kept only just moist enough to keep the roots alive.

P. FALCATA (Sickle-shaped).—A rather tall Fern, from New Holland. Fronds pinnate and lance-shaped, two feet high, growing nearly upright; pinnæ oblong, suddenly coming to a point, heart-shaped at the base, but sickle-shaped upwards; dull green and leathery; seed-case long and narrow, placed transversely on the leaf, thus forming a broad belt close to the margin. Stems scaly. Increased by dividing the creeping root-stock.

P. ROTUNDIFOLIA (Round-leaved). From New Zealand. Fronds pinnate, growing a foot or more long, and reclining. I never saw them, however strongly grown, stand upright; pinnæ, or leaves, nearly round, stout, and dark green, and slightly hollowed out at the edges. Seed-cases linear, placed across the leaf, forming a broad margin. Stems covered with brown scales. Increased readily by dividing the creeping root-stock. This is also a most desirable Fern, and thrives well in a Wardian case.

P. SAGITTATA (Arrow-shaped).—An erect growing South American Fern, of great beauty. Fronds bipinnate, the lowest, the longest, and gradually shortening to the apex, forming a triangle; growing sometimes two feet high; pinnules, or side branches, silvery-green, having short stems, and lance-heart-shaped, with the margin contracted so much that they become arrow-shaped. Seed-cases narrow, forming a broad margin. Increased by dividing the creeping root-stock.

PTERIS.

The most familiar name of all the genera of Ferns, with, perhaps, the exception of *Polypodium*. There are a few handsome species that belong to our division of greenhouse Ferns.

P. ARGUTA (Sharp-notched).—Native of Madeira, the Canary Islands, and St. Helena. Fronds three feet long, spreading, and triangular in form, many times divided, and of a pale green colour; pinnæ bluntly oblong, and sharply cut at the edges. Leaf-stems a foot or more long, and of a rich brown colour; seed-

cases narrow, and close to the margin. Increased easily by dividing the creeping rhizoma. This fine species requires a large space to show off its large, beautiful fronds.

P. CRETICA (Cretan).—Though found in the Isle of Crete, this Fern is widely spread in various parts of the globe. It has been found in the East and West Indies, in China, and in Southern Europe. It will, however, grow in a greenhouse, but should be kept at the warmest end in winter. Fronds pinnate, a foot or more high, and of a beautiful lively green; pinnæ of the fertile fronds narrow, and very long; of the barren ones, long lance-shaped, with the lowest pair often divided in the centre. Stems light coloured. Increased slowly by dividing the slow creeping rhizoma.

P. KINGIANA (Capt. King's).—Found in Norfolk Island only. Fronds partly bipinnate, two feet high, and rather spreading; pinnæ long lance-shaped, hanging down with sharp cut edges. Increased by dividing the short rhizoma.

P. TREMULA (Shaking).—A common New Zealand Fern. Fronds many times divided, spreading, growing two or three feet long; pinnæ broadly line-shaped, and hollowed out at the edges. I find this very handsome free-growing Fern springs up from seed freely on the soil, in the pots, wherever it grows, till its seeds are scattered.

P. UMBROSA (Shading).—This handsome Fern is very common in New South Wales. Fronds two feet high, bipinnate on the lower part of the frond, and only pinnate on the upper. Fertile pinnæ are remarkably long, often as much as ten inches. Sterile fronds shorter, and deeply cut throughout. Increased by dividing the creeping rhizoma. T. APPLEBY.

(To be continued.)

EARLY-FLOWERING BORDER PLANTS.

(Continued from page 23.)

HENCHERA.

A GENUS of pretty-flowering, hardy, herbaceous plants, all flowering in May, and all natives of North America. The name is given in honour of Mr. Hencher, a Professor of Botany, and a German.

HENCHERA AMERICANA (American).—Grows a foot high, with purple flowers. Increased by dividing the plants in spring.

H. GLABRA (Smooth).—Colour pink; growing nine inches high. Increased by division.

H. HISPIDA (Bristly).—This is the tallest of the genus, growing rapidly in spring till it attains three feet high; colour rich purple. Increased by division.

H. MENZIEZII (Mr. Menzies's).—This species has white flowers; growing about a foot high.

H. PUBESCENS (Downy).—A better specific distinction would have been *bicolor* (two-coloured), as it is the only one with two colours, pink and violet; growing a foot high.

H. PILOSA (Hairy).—This grows only six inches high, with pretty violet flowers.

The border for these little-known plants should have a mixture of peaty, sandy soil, well mixed with the common soil of the border. I have found that the greater part of the herbaceous plants from North America do better in a compost of the above kind than in our common loam; leaf-mould and sand is, however, a good substitute where sandy peat is scarce.

HIERACEUM—HAWKWEED.

This is a very large genus of herbaceous plants, many of which are more weeds, yet there are a few worth keeping on account of their easy culture and bright-coloured flowers.

HIERACEUM ANGUSTIFOLIUM (Narrow-leaved).—Native of Switzerland; growing four inches high; yellow flowers, appearing in May. Increased by division.

H. AURANTIACUM (Orange).—Native of woods in Scotland. This species throws out runners like a Strawberry, every one of which produces a spike, or rather an umbell of flowers a foot high, of a bright orange colour, appearing in June. This, I think, would make a good, early, yellow bed, because the colour is good, and it lasts a long time in flower. Increased very fast by its runners. There is a variety with yellow flowers, a native of Switzerland.

H. CROCEUM (Saffron).—A native of Siberia, with copper-coloured flowers; growing a foot high; flowering in June. Increased by division.

H. CYMOSUM (Cymose).—A creeping plant, native of various parts of Europe, with pretty yellow flowers in May; growing a foot high. Increased by division.

H. INCARNATUM (Flesh-coloured).—Native of Carniola, with pink flowers, many on a stem; growing a foot-and-a-half high; flowering in June. Increased by division.

H. PILOSELLA (Mouse-ear).—Native of Britain. I mention this common plant, because I saw it made use of as a bedding-out plant in the gardens of John Smith, near Macclesfield. I was assured, that in May it was very effective, the plants covered the soil of the bed entirely with thin, silvery, soft, mouse-ear-like leaves, and their clear pale yellow flowers, about four inches high, looked very neat and beautiful, proving that there are many plants we never think of that afford us excellent and novel combinations of colour, in leaf and flower, if we would only make use of them.

H. STATICEFOLIUM (Statice-leaved).—A European plant; growing a foot-and-a-half high, with bright yellow flowers in June. Increased by division.

H. VERASCIFOLIUM.—From Italy; growing a foot-and-a-half high, with yellow flowers, in June. Increased by division.

Most of these plants may be increased by seed also, gathered as soon as it is ripe, and sown immediately in the open border, and, when large enough, transplanted; they will bloom the succeeding season.

HIPPOCREPIS.

From *hippos*, a horse, and *crepis*, a shoe; the seed-pods of the genus resemble a horse-shoe. (Many of the leguminous plants have curiously-formed seed pods, and have been named horns, snails, and caterpillars, on account of their forms resembling such insects.) This genus, *Hippocrepis*, contains a few pretty early-flowering plants, with beautiful pinnated foliage, and rather showy pea-shaped blossoms. They all trail on the ground, but do not strike root; but may be increased by layers, cuttings in sand under a hand-light, and by seeds. They are excellent for covering naked banks or rockwork.

HIPPOCREPIS COMOSA (Tufted).—Native of Britain, but not common. Flowers yellow, growing on short stems, three or four inches high; appearing in April.

H. GLAUCA (Silvery-green).—Native of the Italian Alps. Flowers yellow; half-a-foot-high; appearing in May.

H. HELVETICA (Swiss).—From Switzerland; with yellow flowers, and not more than three inches high; appearing in May. A neat, pretty species.

HOUSTONIA.

A commemorative name in honour of Dr. Houston, an English botanist. The plants in this genus are very lovely when in bloom, but are rather tender; hence, duplicates should be kept in pots, and placed under a cold frame through the winter. They should have abundance of air on all favourable occasions, as they are impatient of damp, especially the *cerulea*.

HOUSTONIA ALBIFLORA (White-flowered).—North America; growing half-a-foot high; and blooming in May. Increased by division.

H. CÆRULEA (Blue).—A lovely little North American plant, with pale blue flowers; growing about three inches high, and blooming in June. Increased by very careful division.

H. TENELLA (Slender).—Purple flowers; six inches high; in May.

Though the first flowers of these species open early in the year, yet there is a succession produced for two months, rendering these lovely plants valuable ornaments both for the border and small beds. The soil for them should be half peat and half loam.

HUTCHINSIA.

Named in honour of Miss Hutchins, a clever collector of Mosses and Lichens. These plants are all low-growers, and are very pretty ornaments in the front of the early border. They love a dry, gravelly soil, with an addition of a small portion of leaf-mould and sandy peat.

HUTCHINSIA ALPINA (Alpine).—Native of the South of Europe; growing only three inches high; with white flowers, in May. Increased by division, by seed, and by cuttings under a bell-glass in a cold frame.

H. BREVISTYLA (Short-styled).—Native of sandy plains in Syria and Palestine; having white flowers, in April, and growing four inches high. Increased by seeds and cuttings.

H. CALYCINA (Large-calyxed).—A Siberian plant, with white flowers, and the calyx much enlarged. The bloom appears in May; and looks very pretty seated upon its green bed (the large calyx), though its stem is only an inch-and-a-half high. Increased by division.

H. CÆRÆFOLIA (Onion-leaved).—Native of Carinthia. The flowers are pink in colour; growing three inches high; appearing early in June. Increased by seeds, division, and cuttings.

H. ROTUNDIFOLIA (Round-leaved) Native place, South of Europe; flowers white and purple; growing three inches high; and appearing in June. Increased by seeds and cuttings.

H. STYLOSA (Long-styled).—Native of Caucasus. A tiny plant. The flower-stems two inches high; flowers white and pink, blooming in June. Increased by division. Where a collection of Alpines are kept in pots plunged in a raised bed of ashes or sand, the *Hutchinsias* are indispensable.

HYDROPHYLLUM.

From *hydor*, water, and *phyllon*, a leaf. Elegant plants from North America, with blue and white flowers; allied to the beautiful *Nemophilla insignis*. As the name imports, they love water; hence they should be grown in a moist situation, just the reverse of the preceding genus.

HYDROPHYLLUM APPENDICULATUM (Appendaged).—Blue flowers; growing a foot high, and blooming in May. Increased by division.

H. CANADENSIS (Canadian).—White flowers, in May; growing half-a-foot high. Increased by division.

H. VIRGINICUM (Virginian) Blue flowers; growing a foot high, and blooming in June. The *Hydrophyllums* require a rich compost of loam, leaf-mould, and peat.

T. APPLEBY.

(To be continued.)

TREATMENT OF STIFF SOIL.

THERE is a wide difference in the treatment required respectively by a stiff soil and a light soil. So marked is the difference, in fact, that the time, means, and even the working-tools of the operator, are often of another kind. Now, as this arises from the character of the ground to be operated upon, it is necessary, in the first place, to consider the merits and demerits of such a soil, and

then see what means can be taken to amend or alter it; all of which operations may be regarded as included in the cultivation of heavy lands.

In the first place, some consideration must be had as to climate and situation; for the treatment a heavy soil requires at one place is not exactly the treatment suited to its wants at another place—a difference in latitude of some three or four degrees, or more, making an important difference in the atmosphere, and other agents, which act upon the soil, so that due allowance, in all cases, must be made. In the south of England, and especially in districts near the coast, an early autumn-digging is not only advisable, but highly recommendable; but it will not answer so well for the more northern parts, or in those districts where a great deal of rain is expected. This has been proved over and over again in husbandry affairs, so that instead of one general rule to be guided by in such matters, it would be better to give one to each case; and, in the first place, I will begin with the less-favoured one,—where a long and rigorous winter may be expected, and where the superabundance of rain is such as to keep the land immersed, or at least heavily charged with water, in spite of drainage, which, it is only fair to suppose, has been performed on all garden-grounds, to as great a state of perfection as the situation and other things would allow.

The frequent heavy rains some districts are visited with, to say nothing of the melting snow, &c., renders the ground much more moist than in other places where a proportionate share of mild, open weather assists in somewhat drying the earth; now it need hardly be said that efficient drainage is the first and most important duty to see to, if that is not already done; and even if it is, it is advisable, now and then, to assure yourself that it is really effective, for it not unfrequently happens that the roots of trees and even of annual vegetables find their way down to a drain, and speedily fill it, so as to render it perfectly useless. A case of that kind presented itself to my view a short time ago, where some pipes with very close-fitting collars were taken up, and found to be closely packed with small fibrous roots, apparently from some trees that were not so very near, and the pipes had not been down more than twelve-months, and that in a stiff retentive clay, anything but inviting, but the disturbance of the ground had afforded an easy descent to the hungry roots, and perhaps a little of the best soil had found its way downwards, so as to entice the onward progress of the roots, until they found themselves in contact with the drain pipes, where they must speedily have found access to the interior, and the rest was an easy matter, for, though the progress of roots may be tardy in some positions not exactly to their likings, they fully make up for it when a chance offers of a more agreeable kind; and in this instance their progress must have been as rapid as the growth of a gourd in the hottest part of the summer, for the roots so completely filled the pipe as not only to stop the progress of the water, but to make it a difficult matter to extricate them, and all this in less than twelve-months. The pipes, I may observe, were for the conveyance of water, and not for land drainage, and though not cemented at the joints they were close fitting ones, and every way adapted to the purpose intended. I mention this merely to point out the necessity of now and then examining drains in gardens and elsewhere, for it is very much to be feared they are often rendered inoperative by the causes above. Where they are laid down deep enough, there is not so much danger of the roots of vegetables and other annual productions reaching them, save in the first season, so that it is folly to neglect the examination on the plea that the drain has only been in a few months, for, be it remembered, their first few months are the most likely for them sustaining injury.

Supposing that all three are found to be effective,

and acting well; it now becomes necessary to inquire what is best to be done with vacant ground over them, which we will suppose to consist of a strong, loamy soil, of medium depth, resting on a clay, which, before the drainage was effected, might be described as of the stiffest and most impervious character. Such soils are not only common, but, in many instances, useful and good, and are probably the widest spread of any description we have, and very likely comprise a greater area of the surface of the country than any other; of course, it is needless to say, they modify themselves so as to gradually merge into those of other kinds; but we will suppose the one we have to deal with to be one of the extreme kind, where, some years ago, it was not unusual to see water stand on the top for weeks together, in mid-winter, in every hole that would contain it. In such a soil, it is needless to say, that drainage and judicious cultivation are the first steps to improvement; the drainage part we will suppose to be already done, and the ground to have derived considerable advantage from that, and likewise from the tillage the ground has undergone since these arteries for its surplus fluids were laid down; for, be it remembered, the effects of drainage on such soil is not altogether immediate; on the contrary, it is progressive: hence the necessity of keeping the drains in order. Now, as this has been alluded to, it is needless saying further than that some little examination ought to take place when any large breadth of ground is vacant, to ascertain if any more drains be wanted, and if so, to put them in at once. However, to the cultivation;—and here, I must say, that it is only by repeated efforts, aided by time, and the application of materials calculated to mend such soils, that we can really hope for any radical change.

As we have all seen a brickmaker turn his clay-heap over repeatedly in winter, and that with a view to strengthen its tenacity, it is evident we ought not to subject a piece of stiff land to the same ordeal; yet, by varying the mode in which the operation is done, it may be effected in much about the same time; only, as the brickmaker turns his material when in the wettest possible state, and does it with a view to allow all the rain, &c., to enter it, land for cultural purposes ought to be operated upon in exactly the reverse circumstances; then, when it is advisable to stir it, the driest possible period ought to be adopted for that purpose, and, in some case, that might be delayed until spring, when there is reason to believe that it will be subjected to heavy and deluging rains. Many farmers in the northern counties do not plough their fallows until spring, and find it most advantageous to do so; for the soddening effects of continuous rain more than neutralize the good effects that the frost and other changes of weather are likely to have on it. This, of course, refers to such soils as are inefficiently drained; yet, however well the drainage operation may be done, it is some time ere its effects tell much on ground of so extremely tenacious a character as some are; hence the propriety of sometimes having a piece of ground in a very stiff soil undug until spring, unless you are certain that there is a certainty of the water passing through the soil, and running off rather than remaining in it.

Supposing, however, that the drainage be perfect, and to have been in use some years, so that an increased depth of tillage has been accomplished, then the ground may be dug with advantage, and if it be not cropped until spring, I would say, let it be dug very deep too, or it might, in fact, be partially trenched, by turning up some of the bottom soil, and allowing it to remain at bottom again. This bottom substance, doubtless, will consist mostly of clay, or other matters of that kind; nevertheless, a little of that disturbed will do no harm, but good, especially if anything can be added to it that will prevent its running

into a compact and impenetrable mass again. Mortar-rubbish, rough, soft-stone shatter, as the chippings from a stone-mason's-yard, coal-ashes, or lime, are all good agents that way; plain sand has not such a good effect, unless used in such large quantities as makes it a matter of great expense to procure it. In addition to these things, brick-rubbish, or any other refuse of the kind, might be used; or, which would be better still, "burnt clay," of which I will say something hereafter. In fact, anything that will form an opposing medium to the different portions of the clayey mass uniting again will do, and such materials are more plentiful than is generally supposed; for I have had saw-dust, and the half-decayed chips, and other refuse from a carpenter's or sawyer's-yard, dug in with good effect; for though these things may not be so durable as some others, yet their resisting the union of the tenacious mass enables the air, and probably the roots of the crop, to exercise a salutary influence, so that, with the advantages which draining affords, it is likely an important change will have taken place in the sub-soil. J. ROBSON.

THE EMIGRANT.

By the Authoress of "My Flowers."

(Continued from page 26.)

In describing the history and characters of men, it is right to be watchful over ourselves—not to suffer our own opinions or views to make us lean too strongly one way, and too lightly the other. There is such a wonderful mixing-up of good and bad in every thing connected with human nature, that we must be very careful to pick out and separate the one from the other, and deal in the whole matter as faithfully and impartially as we can. There is something holy and beautiful in the feelings that prompted John Henry to undertake emigration, though the step was one which brought no blessing and ended unhappily. How difficult is it even for a confirmed believer to walk circumspectly and scripturally! How difficult is it to our dim perceptions to distinguish between right and wrong in many cases! This should lead us to be very cautious in condemning others, for that we ourselves are too often to be condemned.

Mr. Johnston says: "It will be remembered, that for some time after I became acquainted with him he had made a fruitless effort to qualify himself for the office of schoolmaster; having failed in the attempt, he felt the disappointment bitterly, particularly as his father had incurred expense; the idea that money had been expended upon him to no purpose affected and distressed him over much. After some reflection, and prayer, and consultation with myself and other friends, he determined he would no longer remain at home, but endeavour, by his own exertions abroad, to refund the money which had been spent upon his education. With this object in view, he joined the party of emigrants before-mentioned, who were about to leave his own neighbourhood for Australia. In doing so, his highest ambition was to repay his father the expense he had entailed upon him when at school. He had none of those golden dreams of amassing wealth, or making a large fortune, which fills the minds of the most of men who seek a home in distant countries. The utmost he looked for was a moderate independence, neither poverty nor riches, simply food and raiment, and having these, he would have been therewith content. He had learned the truth so happily expressed by Goldsmith—

"Man wants but little here below,
Nor wants that little long."

That little, so far as God saw fit to give, was all that he sought for or expected. No one that knew him could fail to perceive that his treasure was not upon earth. Jesus was to him the pearl of great price, and he well knew that he was already rich in Him. His emigration was, therefore, undertaken, not to acquire worldly riches, but merely to find a field of honest industry, in which he could obtain adequate remuneration."

Perhaps no one ever prepared to emigrate with less worldliness of spirit, or in a more holy frame of mind. Yet this very fact may be intended as a warning to *Christians* to look well to *their* undertakings—to take heed to their ways—to examine very closely their motives—and look deeply and prayerfully into what they are going to do, when any great change of this kind is contemplated. To leave religious light and ordinances and privileges behind us, appears to be so plainly opposed to the will and precepts of the Lord, and so dangerous to the soul, that scarcely any reason or cause can justify it. It seems to be acting in the spirit of the Israelites, who fled for help to Pharaoh king of Egypt, instead of covering themselves with the cover of the Holy Spirit, and asking at the mouth of the Lord: "For thus saith the Lord God, the Holy One of Israel: In returning and rest shall ye be saved; in quietness and in confidence shall be your strength; and ye would not. But ye said, no; for we will flee upon horses; therefore shall ye flee: and, we will ride upon the swift; therefore, shall they that pursue you be swift." Let us consider this matter well.

Mr. Johnston continues: "He has now left his home for ever; he is now in a strange land, far from his native country. In the midst of the bustle of an emigration seaport everything is new to him—new faces, new circumstances, new sights, new scenes—even the church at Plymouth is new—he has never seen or heard an organ before! It is not to be wondered at, if we find him writing more fully about worldly matters than we have been hitherto accustomed. But still, notwithstanding the preponderance which we are now to find in his letters on these points, there is the same heavenly spirit breathing through them, there is the same highly spiritual tone appearing, perhaps at wider intervals, and scattered more lightly over the surface, but still to be seen here and there, like a thread of gold, interwoven throughout, showing that though his position and circumstances were altered, the man was still the same; his affection set on things above, and his heart still fixed upon that Saviour whom he loved with such a warmth of devotion. Like the mariner's compass, which, however it may veer or vibrate in the storm, still points to the pole-star when at rest, so with him, whenever freed from the whirl of excitement in which he was kept by the business and occupation which daily pressed and increased upon him, his heart still turned to Jesus as his only real abiding resting-place. His soul clung to Him as his chiefest joy."

Perhaps one of these simple, beautiful letters may interest some reader.

"Dear brother William,—As I have no potatoes to dig here, nor corn to thresh, nor any thing of the sort—all around me is a vast, large ocean—I therefore wish to write you this little note, as it will be an amusement to me to write betimes when I am sending a letter to father; probably I will write to him from the Cape of Good Hope, if the Lord will spare me to reach that harbour, and I have got time.
* * * * We set sail from Plymouth on Tuesday evening, 16th October, 1849. You would wonder to see a ship set sail. I suppose there were fifteen or twenty sailors; they were hoisting up the sails, which are like sheets, or winnowing cloths; perhaps there were fifteen or twenty of them hoist up. If you were to hear all the sailors sing a departing song, as they were all bringing in the anchor, you would feel her moving. They would sing—'Now she goes!' 'Now she goes;' and so she was moving slowly off. We passed many a vessel since. We are now in the Atlantic; we do not see so much of them now. Some days we see two or three, and some days more. If they pass near us, our captain calls out who they are? they answer as they pass by. If they are for London or Plymouth, he tells them to say they had met the *Cornwall*, and that she was getting on well. There are a few sheep in the ship, also a few pigs, and a good number of hens.

"Now, dear brother, I would give you one word of advice, though very far distant, and that is to seek and find a Saviour. Jesus Christ is love. Oh come to Him; He will in no wise cast you out. If during life you have Christ in your soul, He will not leave you in death; and would not this be worth the whole world! Oh yes, a thousand worlds. It is the blood of Christ that cleanseth us from all sin. Oh that precious blood! Should we not go to Christ with every sin, and get it covered, and be covered ourselves, with His

righteousness? Oh be wise, and understand this; it is a very important thing—it may well be called 'the one thing needful.' I wish you to regard this as a simple, yet important word of advice. I enclose these lines in my father's letter.

"I remain your affectionate brother,

"JOHN HENRY."

Readers; we are "careful and troubled about many things." Let us ponder John Henry's important advice from the emigrant's ship while time is ours!

MOVING VINES WHEN IN FLOWER, AND PEACH AND NECTARINE TREES WITH FRUIT ON THEM.

I HAVE thought (should it not intrude on your valuable space), of sending you the result of an experiment which I superintended this season with some Peach-trees.

In the course of the improvements which are being so extensively carried out by his Grace the Duke of Devonshire, at Buxton, it was contemplated to throw down a range of hothouses (that stood in the middle of what are termed the Serpentine Walks), which consisted of two Vineries and a Peach-house; and there being no other glass at the place, it was resolved to put everything to the hammer; and, it being about the 10th of April, the Vines were in flower and the Peaches were set—a very unlikely time to move such things.

However, as we had a Vinery and Peach-house at the time nearly complete, my employer was desirous to try the experiment of moving them. It may be conceived, the experiment was not a tempting one for me to move Vines in flower that had seen the top of twenty summers, and Peach-trees, of the same age, studded with fruit the size of Peas, that had not been lifted all that time; nor were we so far advanced as to receive them until the last week of April; and the houses at Buxton being then in course of removal, I was obliged to move the trees, and that under the influence of a hot sun and an easterly wind.

The Peaches and Nectarines were first moved; and it may be well to mention that the Peaches were on the dwarfing system, and did not cover a space of more than forty square feet each, but the Nectarines about eight square yards. We proceeded accordingly to raise them with due care, but were unable to retain a particle of the soil to their roots, which were immediately wrapped in a mat, and transferred to their new position, duly spread, covered, and watered, the leaves shaded, moistened, and kept so for at least a fortnight, until they had taken hold; not forgetting to examine daily what I expected would result from their untimely transition, viz., the falling of the fruit. However, weeks passed over, but none of the Peaches seemed to shew the slightest appearance of being disengaged; but the Nectarines were reduced to half their number, leaving about two dozen on each tree; and as the Peaches would not voluntarily relinquish their place, I deemed it prudent to thin them out to about one dozen and-a-half on each tree, and the whole went on to perfection, so that between the 25th of July and the 18th of August I harvested seven dozen and one Peaches and Nectarines. The Nectarines were below an average size, but tolerably flavoured; but the Peaches were of an average size, measuring from five-and-a-half to seven-and-a-half inches in circumference, but somewhat deficient in flavour, notwithstanding every precaution to secure it.

The odd one mentioned above was a Peach that grew on a small tree, which, as I am informed, was formerly in a pot, but as the roots protruded though the bottom, the pot was broken, and the tree planted in the border, where it remained four years. Previous to being lifted in April last, when it was replaced in a twenty-inch pot, it showed only one fruit, which it perfected, and turned out to be the best-flavoured of any.

The Peach-trees have made beautiful wood, and are a perfect mass of flower-buds. The Nectarines have, perhaps, made longer shoots, but not so promising.

You will not be at all surprised, when I tell you that the less we say about the Vines the better. However, one of them has made a tolerable shoot of fifteen feet in length.

Mr. Beaton had almost persuaded me to fall in with his request to take a part in the criticism of last winter's effects on our more tender plants at this elevated position of 1200 feet above the level of the sea, but being doubtful whether sufficient materials could be collected in my limited sphere to render it interesting, I deemed it prudent to leave the task to some one of larger experience than myself.—A. L., *Gardener to H. Shaw, Esq., Coebar Hall, Buxton.*

[We are very much obliged by this highly interesting communication, and shall be also for the result of A. L.'s observations on the results of last winter. Every similar contribution adds to our genuine information on the hardihood or tenderness of plants in different localities. It is important, in such communications, that the nature of the soil and the aspect be specified.—ED. C. G.]

THE PROFIT AND LOSS OF POULTRY-KEEPING.

AN opinion that Poultry-keeping had been found profitable where either "many" or "few" were kept, would, probably, in a large majority of cases, be found correct. Now, by these expressions "*many*" or "*few*," we are not to understand mere numerical conditions, but a proportionate regard to capabilities of supplying food, and extent of ground. Thus, while six fowls may be ample for the cottage, sixty may be too few for the farm.

The reasons that influence such a conclusion are manifest. The cottager has many scraps valuable for Poultry, though insufficient for a pig, or other live-stock. Every morsel of those scraps may be thus applied, and the purchased food, corn and meal, is thus reduced to the smallest amount. We say nothing here of the advantages of the warm winter-roost in the capacious chimney of many of our rural cottages, as that would only come before us when the labourer and the farmer were rivals in their fowls. The farmer, however, who regulates his feathered stock in just proportion to his means of feeding them and the run they are to enjoy, may be also said to keep "few," as we oppose the meaning of that word to anything in excess. He considers what proportion of food the rick-yard may supply, and which would be otherwise lost, and also what natural food, and in what quantity, may be afforded them in his rick-yard and fields.

Thus one most important element of success is present in both these cases: the birds are not crowded; they obtain their fair proportion of food, and they are, consequently, in thriving condition. Both these are cases where anything beyond the refuse-corn is reluctantly doled out to the Poultry.

But still we cannot refuse our belief to the assertion, that Poultry-keeping is occasionally attended with profit where such proportions are far exceeded. These, however, are the instances we have already alluded to as where "many" are kept. In the ordinary farm-yard little thought is commonly bestowed upon this branch of agricultural economy, but where the advantage of good markets have been made available, the returns from the Poultry are sometimes found to approximate closely to those from other stock. But this only happens where a regular system of good management prevails, and all the necessary details are carefully conducted. If left to inattentive attendants, the impolicy of an excessive flock would manifest itself here as clearly as in other instances, and, indeed, constant caution is ever requisite to avert the evils that would otherwise be sure to arise. The ability to provide a supply of good Poultry at all seasons secures a certain demand; and the cost of food and management, when thus systematically arranged, should fall proportionably with increased numbers. Hence, the source of profit where a large stock—i.e., large beyond what the extent and capability of the farm would justify without special attention to economy of management.

Fancy prices, it will be apparent, have found no place in our calculations, referring simply, as we have hitherto done, to a "*bona fide*" market value. There can be little doubt, however, but that the selection of a good breed will pay best even as dead poultry; and living birds will, therefore, be at hand, and, at times, find a ready sale at prices greatly in excess of those obtained for their defunct companions.

During the late excited state of the fancy-poultry market many exceptions might, of course, be quoted to our conclusion, that the yard has paid best where either "many" or "few"—in the sense in which those terms are here employed—have been kept. An overstocked yard, under ordinary conditions, must lead to disappointment; and, on the other hand, the chances of success rise rapidly when numbers are duly regulated, or a superior system of management warrants the increase.

Careful writers have long felt the important character of our present knowledge on many points essential to successful poultry-keeping, and the various circumstances that materially influence such calculations are the cause of the many apparently contradictory opinions that are now broached on this subject. What answers, for instance, should we get to an enquiry addressed to a given number of breeders in different parts of England, as to "whether chicken or eggs pay best?" We should, doubtless, have positive assertions on each side, and the peculiar circumstances of each respondent would very probably justify his reply. But unless these particulars are also stated, the public, in reality, learn nothing, and are, in fact, as likely to be thus led in the wrong as in the right direction. We may be permitted, however, to take an average of such opinions, and this would place chicken below eggs as a source of profit. The return, in the latter instance, is immediate, and we can reckon on the cost of production with far more certainty than is often attainable in the hap-hazard calculations of rearing and feeding chicken, of which an accurate account is seldom, indeed, possible; save only, perhaps, in the instance of such as pass their existence entirely within yards of limited extent, and with them the question of profit and loss is seldom doubtful. Where the data are trustworthy, eggs, certainly, seem to have usually paid better than chicken, and wherever the contrary is shown to be the case, special opportunities of good markets for early produce have been met, by attention and diligence, far beyond what Poultry commonly meet with. It seldom happens, however, that the farmer knows what his Poultry has really cost him.

Despite assurances and authorities most positively received, it is also far from a settled point what race of fowls is best suited to the wants of the farmer and cottager generally. The "Hamburgs," as egg-producers, have often been strongly recommended; but our experience, and all their varieties have been tested under the most favourable circumstances, does not give them, by any means, so favourable a character as they have received at other hands. They are, moreover, very susceptible of disease, and require a larger proportion of food than would be imagined from their roosting, and, as we should have inferred, self-providing habits. The large Asiatic fowls generally, however meritorious as layers at the most valuable time of the year, yield to others in their fitness for the table; and Polish are assuredly an aviary bird, and unsuited to a rough state of existence.

Where chicken are more looked to than eggs, the "Dorking" and the "Game Fowl" have many recommendations; the former, where it thrives, probably standing first. But the latter, ever in good condition, even on scanty feeding, provided it enjoys a suitable run, is a bird whose merits have hardly, as yet, been duly recognised. They are, at the least, as good layers as the Dorking, and are kept at much less expense; and if of less weight they are of infinitely higher quality and flavour.

For Geese and Ducks the ground should be adapted for their several habits. A village green and its pond holds out every prospect of the former being kept with profit, while every natural advantage is required to make the latter pay. This is a general remark; and exception might be here taken to the early Ducklings that are fatted at Aylesbury and elsewhere for the London and other high markets. But where any large proportion of their food has to be provided out of their owners stores, Ducks, under ordinary conditions, rarely, we imagine, give good returns.

"Turkeys," nine times out of ten, pay the poulterer better than the breeder; and the "Pigeon"-house is often tenanted from the difficulty of getting any approximate estimate of the cost of production; and thus, too, might the "Guinea-fowl" be spoken of.

POTATOES AT NORTHAMPTON.

I HAVE just received the following opinion of some of the best sorts, kindly communicated by Mr. Archer. It is of importance, as coming from a good judge and a good grower. It is strange how tables differ in different neighbourhoods. Mr. Archer seems to have no great love for yellow Potatoes, and many hereabouts, to my amazement, have as little relish for white ones. Some, again, have as great a distaste for mealy ones as others have for those that are waxy. While on this subject, I may mention that I understand a capital custom for purchasers has been introduced at the Potato market, at the Terminus of the Great Northern Railway, King's Cross, namely, the opportunity of trying the different Potatoes in a boiled state, so that purchasers may there satisfy their individual tastes. But I am keeping you from Mr. Archer's communication. R. FISH.

Northampton, Oct. 12, 1854.

"Sir,—In compliance with your request, I now send you the names of a few Potatoes cultivated in the neighbourhood, leaving you to make what use of the remarks you may judge proper.

"JACKSON'S IMPROVED ALBION.—This is one of the best, if not the very best Kidney Potato I have seen; being moderately early, very prolific, grows a good size, and is of very good quality.

"NAPOLEON KIDNEY.—This differs from the improved Albion, in having a rougher skin. I had it from Nottingham four seasons ago, and find it a first-rate Potato; a good cropper, and of excellent quality.

"LAPSTONE KIDNEY.—This I had about the same time, but it got diseased so much I thought proper to discard it; but I have since seen it in good condition. It is a beautiful shaped Potato, and a good cropper.

"FLUKES.—These, from what I have seen, promise to be a capital variety, but not having much experience myself, I cannot speak so confidently of its merits as the others.

"ENGINEERS.—This is a remarkable variety, being different in the foliage to any others I have seen. The tubers grow a fine size, and of good quality, but with me it has been liable to disease.

"FLOUR-BALL (Rylott's).—This I consider the best round Potato grown, for quality; and on good soil, it is very productive. I have grown it now for several years. No gentleman's gardener ought to be without it.

"SODEN'S EARLY OXFORD.—A good, early, round Potato, smoother on the skin than the last-named, and when grown large, in good soil, is rather long in shape.

"EAST INDIAN.—These are early and very prolific, but rather yellow; a disadvantage, in my opinion; but, nevertheless, a good market Potato.

"IRISH APPLES.—Another good, round, early Potato, although not very extensively grown. A dish shewn at Wellingborough was about the finest I ever saw exhibited.

"REGENTS.—These are so well known, and so extensively cultivated, as to require no commendation from me.

"AMERICAN SEEDLING, or *American Native*.—I have grown these for several years, and a good sort it is; but from having strong haulm and foliage it requires more room than the last-named.

"FARMER'S GLORY.—These are grown most abundantly in this neighbourhood, and, for market purposes, I know of nothing that will beat them.

"SCORCH FIRS, or *Jemmy Brown's*, or *Farmer's Profits*.—The last name I consider the most proper; is about equal to the last both in quality and produce, but is purple outside instead of white. They are more cultivated in Nottinghamshire and Derbyshire than in this neighbourhood.

"GOLDEN EAGLES.—This is a new sort here, but very highly spoken of. It has taken a good many prizes in different parts of the country. There was a nice dish shewn at Northampton, but which I think you judges must have overlooked.

"These are some of the best kinds cultivated in this neighbourhood, and if there are any of them you would like, I shall feel much pleasure in sending you some.

HENRY ARCHER."

[We shall be very much obliged by any one naming and describing the best and least-diseased Potatoes cultivated in their neighbourhood.—ED. C. G.]

INFLUENCE OF PARENTS ON THE CHICKEN.

In last week's COTTAGE GARDENER I saw a notice from "W," in which it is stated that "it is generally admitted that pullets partake more of the sire's character, and cockerels of that of the mother." Similar results are enquired after. If the following are of any service, make use of them.

Last year I obtained a sitting of Shanghae eggs from a friend; I knew that he also kept Minorca fowls running in the same yard, and, further, that Mr. Minorca was "the head of the establishment." All these chicken (ten) were black, some of each sex, having pea-combs, some single. The pullets, in their first moult, continued black; the cockerels managed to get, here, and there, a few coloured feathers. I think the cockerels were more feathered on the legs than the pullets. In my experience this year the chicken have been invariably black; the earlobe has generally been white.

A grey Dorking cock and buff Shanghae hens have produced two speckled grey pullets (more *speckled* than the Brahmas), two reddish pullets, and one reddish cockerel, sometimes the five claws wholly absent, as in this cockerel, and one of the grey pullets, while the two reddish pullets have a fifth claw on one foot only.

I have obtained some curious results from breeding with a Minorca cock and one of the half-bred (Minorca and Shanghae) pullets spoken of above; in some cases, the birds have been black, with silvery white on the wing, coverts and silvery white hackle—very handsome looking birds.—H. B. S., *Monmouthshire*.

HINTS FOR THE COTTAGER.

CUTTINGS OF SHRUBBY CALCEOLARIAS.

As early as possible in October is, I consider, about the best time to get in a good batch of cuttings of the different varieties of shrubby Calceolarias in turf-pits. Cuttings may be taken about two inches long, cut to a joint, the two lower leaves taken off, and inserted, about two inches apart, in light sandy soil, which should be watered and made tolerably firm previous to the cuttings being planted. Let not the hole intended for the cutting be made deeper than an inch, and great care should be taken that the base of the cutting touches the bottom of it. I wish to impress this strongly upon the mind of the cottager, as I fear many lose their cuttings through not properly attending to this significant part of the business. As soon as a sufficient quantity is planted, they may receive a moderate watering, to settle the earth round the collar of the cuttings. Shading during bright or windy days, uncovering at night, form the chief attention they require until the end of the month, when they may be exposed to as much air as possible. I have forgotten to mention, that I recommend the cuttings to be planted about two feet from the glass. Glass? No glass is required; a few boards nailed together to lay on to sheet off the rain (which they will stand a considerable portion of), and three inches to a foot of straw, according to the weather, is all that is required in ordinary winters. We have just planted upwards of four thousand, which will receive no more protection or attention. About the middle of March they may be taken up with nice little balls, and planted on a south border, from four to six inches apart, shading and sprinkling as before, and protection according to the weather. Generally, a few mats, or Spruce branches, will suffice at this period until the latter end of April, when they may be exposed altogether; and by the middle of May they are nice, stocky plants, ready for the decoration of the flower-garden.

I have often thought, what a different appearance many cottage gardens might present if the cottager would go to a very little trouble and trifling expense. The kind lady here gives cuttings to all the cottagers in the neighbourhood who choose to try their skill at this nice branch of gardening, and many of them, I am pleased to say (particularly the female sex), are quite expert hands at propagating. We have a woman in the gardens here that makes hundreds of cuttings in a day as well as I could make them myself.

There is one *Calceolaria* that requires to be preserved under glass during the winter months—I mean, *Amplexicaulis*; this is a very tender one, but one of the best yellows we have.—T. PERKINS.

NOSEGAYS.

I RESPOND to the remark of your D. Beaton, in *THE COTTAGE GARDENER*, that "*we want more cultivation in nosegays*," and whilst reading his short article on the subject, at page 18, it occurred to me that I had a couple of young friends about to marry, and I would try my hand at a bouquet to set on their table after dinner with the dessert. The pyramidal form was the one which ran in my head; but how to keep the upper tier of flowers as fresh with moisture as the lower ones, was a difficulty. At length I hit upon the following plan:—I got a straight hazel rod, about the size of the stick of a parasol, eighteen inches long, and placing this upright, with my penknife I make a cut two inches from the smaller end, sloping downwards and inwards, a little thicker than the bark, and about half-an-inch in depth, then another two inches lower on the other side, and so on, alternately, to within six inches of the bottom, which was left for the handle; I next drew these cuts carefully down, till they stood out like lips or spurs at right angles from the stick. It was then covered (save the handle) with long sphagnum moss, beginning at the top, and carefully widening it down to the base; this was lightly interlaced and fastened round with thread; when finished, it was about one foot high, six inches in diameter at the bottom, of a pyramidal form, and resembled a lady's parasol when loosely closed. The spurs and thread kept the moss in its place, at the same time it was open and elastic. I then inserted the handle of the stick in a mug filled with sand, and placed it on the table, with the flowers previously gathered, both hands were thus left at liberty, and the flowers were stuck into the moss like pins into a pincushion; no particular plan was followed, but the whole were so placed, as to reflect each other's beauty, and under the lower row, which were darkish flowers, sprigs of *Aster elegans* were so arranged as to hang their silvery plumes over the vase or basin in which the nosegay might be subsequently placed. The handle, however, could be cut off, so that if necessary it might stand in a dish, and when finished, it looked rich, light, and elegant; a few of the mossy sprays appearing, here and there, among the flowers. To preserve the freshness of the nosegay, it was only necessary to turn the uppermost flower a little on one side, and pour the water in at the top, this circulated freely downwards through the centre of the moss and stems, and ran out at the bottom without damaging a single flower.

This is only one of a thousand ways in which the thing may be managed, and it is merely intended, as "D. B." suggests in an "off-hand-way," to keep the subject alive, and for others to improve upon. I look upon flowers as elements of refinement, and great as the pleasure is in cultivating them, that pleasure must not stop there, but be carried out in their artistic and scientific arrangement, for the purpose of cheering and ornamenting our dwellings. My first attempt was not complete, but I learnt much, both from the points of failure and success. I further tried my hand at a dome-shaped bouquet, composed of various coloured Dahlias; but though I had often seen the feat performed by women as they sat on their stools in the flower markets at Paris, I could not, for the life of me, succeed with one, and this is a desideratum much wanted. Perhaps some of your intelligent readers, who may have given attention to the subject, will kindly inform us how they are made. One flower will stick up above another, and there is no keeping of the lower ones, as the circle widens, in their places.

Now I am on the subject of Nosegays, let me add a few words on *Wild Flowers*; more advantage may be derived from these than is at present the case, and as the season is approaching when flowers will be scarce, and their value more prized, an opportunity offers for the introduction of wild flowers in the form of simple nosegays as in-door ornaments. Let any benevolent lady (for ladies do these things best) who may reside in the country, and not far from a town, just try her hand in the construction of a few bouquets

of such wild flowers as are in season, and when tolerably skilled in the art, let her select a poor girl from the village-school, or the family of some needy cottager, and impart to her the necessary instruction for gathering wild flowers, and arranging them into nosegays of different forms and sizes; and it is not too much to say that a basket full of these glittering treasures would find a ready sale among many families in town who have a love for flowers, but not the opportunity for procuring them. Should these hints be successfully carried out, it would furnish an agreeable occupation for the hours wasted by many poor children, be a source of emolument to their families, and a boon to those who purchased the bouquets.—P. S., *Rushmere*.

THE FLUKE POTATO.

I PROCURED a few of the *Fuke* Potato, a sort of late kidney, and planted them the beginning of March in an old garden near Stroud, in Gloucestershire. The ground had been planted with Potatoes every other year for a long time; and out of five different sorts this Potato was the only one almost free from disease, besides bearing a double crop on ground not highly manured. The haulm remained quite green until the tubers were dug up; and nicer Potatoes to eat are rarely to be met with. I strongly recommend this Potato for planting in the next spring. I am quite aware that it is known to most of the nurserymen; but I find, in some localities, it was scarcely heard of.

I think it may be useful to many of your readers to know, that the seed can be had at Bristol, and most of the large towns in this district. The produce, on some soils, I am told, is about one hundred sacks to the acre, of sound crop.—H. W. NEWMAN, *Lansdown-road, Cheltenham*.

VINEYARDS IN AUSTRALIA.

(Continued from page 52.)

IN bringing forward inducements for colonists in general to embark capital in the production of wine, we may, however, leave out for the present the prospect of competing profitably with continental Europe in the London market. International interests are now rightfully recognized in matters of legislation; so that, in mercantile language, protection of home or colonial produce is gradually becoming obsolete. Granting, therefore, that our wines were generally acknowledged to be equal in quality with the corresponding wines of Europe, we have to take into account the drawbacks of our colonial position in the matter of labour. The expenses of our vineyard produce, from the scarcity of labour, will, for a long time to come, prevent us from competing favourably with the European wine grower in his own market.

In the meantime, however, we have a market at home, in the colony, sufficiently important to induce attention to its demands. The importation of wines into New South Wales, during the last year, amounted, in value, to nearly half a million sterling; of wines and spirits, with other fermented alcoholic liquors, to about a million. Taking the consumption of Victoria and the other colonies around into the account, we are within the truth, in assuming our colonial or home consumption of wines to equal in value one million pounds sterling per annum. Now, say, that we were to make arrangements to meet only half this amount of consumption. In this case, at the average rate of production per acre of 200 gallons, and at the average price per gallon of 2s. 6d., the quantity of vineyard ground necessary to afford the requisite produce would be twenty thousand acres, or nearly twenty times the existent amount of vineyard cultivation. Under these circumstances, granting no increase of consumption, we could not possibly supplant entirely foreign wines, in our own colonial market, for six years to come. The production of marketable wines is a process which involves time. As to the means of accomplishing the result in question, these are amply abundant, inasmuch as, out of the amount of cultivation, land already under grain and grass crop, far more than the requisite number of acres, could, if eligible, be forthwith occupied as vineyard ground. Nay, for meeting the demands of the vastly more extensive markets of Europe and India, time only is indispensable. Our arable land throughout the

entire extent of the colony is fitted, in most cases admirably so, for the growth of the grape; so that, within the compass of our available lands, we have it in our power to bring into bearing, as vineyard ground, a much greater amount of land than is in actual cultivation in France, for that purpose. Of the ample extent of our means for the production of wine, there need, indeed, be no question; and of the possible superiority in quality of the product, the meetings of this association have afforded abundant proof. The only question with capitalists, then, under the circumstances is, as to the comparative profitableness of the employment.

Calculations made with great care and consideration, where a wide range of colonial experience entered into the account, and every precaution was taken against contingent sources of error, were found to authorise the following statement:—"If ten acres of uncleared land appropriated for vineyard cultivation, be purchased at the rate of £2 per acre, be cleared, trenched, and planted with sufficient skill, it will be found that at the end of the THIRD YEAR, the produce of the vineyard may be made to cover the yearly outlay with the interest on the capital embarked in the undertaking; that at the end of the seventh year, it is capable of replacing the original capital vested in the concern, with interest and all antecedent outlay; and that, thereafter, it is calculated to yield a clear annual profit of £300, on an outlay of £200, or a constant profit of 150 per cent. on the annual expense of management."

When, along with this statement, is taken into account the mode of application therein contemplated for the capital invested, few capitalists whose object in life may be to superintend the outlay of their capital themselves can have grounds to hesitate in giving preference to vineyard culture over ordinary means of profitable occupation. Within the circuit of his homestead grounds, furnishing pleasurable, interesting, and healthful occupation, throughout the entire round of the year, for the leisure moments of all the inmates of his house, however numerous; involving, besides, in the whole course of operations, from the planting of the cutting to the maturation of the wine, endless opportunities for scientific observation and philosophical study; the capitalist vigneron may combine in the routine of his professional occupation the healthy independence of the farmer, the gainful sagacity of the merchant, and the high-minded investigations of the philosopher.

If objection be taken to observations of this sort, as if grounded on assumed data and as being at best mere flourishes of the pen, unsupported by matters of fact, we have it in our power to point, in corroboration of their substantial accuracy, to actual results, as placed before this association, in the course of its successive meetings. We have it on record, that the same individual acre of vineyard ground has produced, on an average of four successive years, upwards of four hundred gallons of wine per annum, of that class of wines (the Burgundy, made from the Pineau variety of the grape) which are well known to be, compared with other classes, by far the least satisfactory in their yield as to quantity, but correspondingly the most valuable as to quality. We have it on record, that the average produce of a given piece of vineyard ground, less than an acre, planted with the Goniais variety, was, for four successive years, at the rate of 800 gallons per acre. We have it on record, that the average value of the produce of the same acre of vineyard ground, planted with the black Hamburg variety, reckoning the price of the wine made therefrom at a *shilling per gallon*, was, for four successive years, nearly £100 per annum. We have it on record, that the average product of a vineyard on the banks of the Paterson River, for the last five years, was at the rate of 520 gallons per acre. We have it on record, that under favourable circumstances, 1,800 gallons of wine had been made during a single vintage from one acre of vines. These are facts which conclusively enough show that the statement hazarded above is not beyond the authority of actual experience."

WOODS FOR CASKS.—The indigenous woods of this colony are not generally well suited for the manufacture of casks to contain liquids. The cementing matter of their fibre being gum renders them apt to shrink much on drying, and to expand again on being wetted. In like manner they are affected by changes of temperature. The unequal application of moisture and drought also warps them when cut or

split into boards or staves; whilst they continue to shrink by the removal or decay of the gum.

The gum, too, which our woods generally contain, possessing a large proportion of *tannin*, is consequently highly astringent.

The consequence to be expected in employing colonial woods for casks, therefore, is, that the astringent matter will enter into solution with the wine, and communicate it to qualities, which, if not actually poisonous, would prove highly injurious to it as wine.

Fermenting tubs, however, of about the capacity of 400 gallons each, have been constructed at Irrawang of what is called in this district William River pine, a wood free from gum, but containing a peculiar resin, only in a minute and unobjectionable quantity. This wood has been found to answer that purpose exceedingly well; it is clean, close-grained, and durable. Large casks of good quality have also been made there of the kauri pine, from New Zealand. That timber (although rather soft) is cemented by an almost tasteless and inodorous gum-resin, insoluble in water, and not easily decomposed, which renders it impervious to liquids, and not subject to decay. It is therefore well suited for the construction of fermenting vats and large wine butts, which are not necessarily subject in using to much wear and tear. The timber is besides specifically light, and vessels made of it therefore are more convenient to handle or move about. Split staves of it, of any dimensions, could readily be procured from New Zealand, at a moderate price.

The wood of the colony which I have found best suited for the fabrication of small casks for wine is that of the indigenous tree well known to us all as the forest Oak. It possesses in a remarkable degree the property of shrinking in drying in the direction of the circumference of the tree, whilst it scarcely shrinks at all in the line of the diameter. It splits, therefore, from the centre to the circumference, the staves are not apt to shrink in their breadth, or warp, and are particularly well suited for the making of quarter pipes and for the heading of half and whole pipes, for which purpose I have long generally used them. The sap wood, however requires to be removed, the red wood being generally much more durable. The staves, moreover, require to be dressed while the timber is green, as it becomes more difficult to cut when perfectly dry. As an illustration of the qualities of this wood, I may mention that the heads of two puncheons were made of it at Irrawang (the original oak ones having decayed); they are used as water casks, have been exposed in the open air externally to the sun and wind, to water on their interior surface, for a period of more than three years, and only protected outside by one slight coat of paint; yet the forest oak is not in the least shrunk, warped, or decayed. Although free from astringent gum and turpentine, there is an objection, however, to the use of *new* forest oak casks for wine. The wood contains a soluble bitter ingredient—probably salicine—which would flavour the wine, if not previously removed. For that purpose they require to be filled repeatedly with water, allowing it to remain in the casks long as possible before becoming putrid, which water will do in any casks. I have found the bitter principle more readily removed by filling all the new casks during the vintage with the liquor intended for the still, allowing it to remain in them as long as possible; when emptied, the casks should be afterwards filled with water containing a portion of wood ashes; after a few days to be again emptied, carefully washed with clean water, and, when dry, fumigated with sulphur. They will then be perfectly sweet and clean for wine. Even casks made from the best European or American oak are subjected to a similar treatment at the wine cellars on the continent of Europe before they are filled with delicate wines.

The European or American Oak would be preferable for casks to any known colonial timber, as they are lighter and more easily wrought up. It is to be regretted that so little of either is imported into the colony, and that when any does arrive, it should be (as is generally believed) monopolised, through the mutual understanding of the trade, by some one or two of the Sydney coopers, who will not dispose of any to persons in the country except at an absurdly extravagant price. I have paid in Sydney, years ago, five shillings each for Hamburg staves, having two cuts each run through them.

There may be other woods growing in the country which may be found superior for casks to any I have noticed. It is to be hoped, therefore, that other members will lay before the association the result of their individual experience on that subject.—JAMES KING, *Irrawang*.

MAITLAND.—Flour is quoted at the same prices, 28s. to 30s. per 100 lbs. for fine, and 26s. to 27s. for seconds; bran is in good demand at 20s. per 100 lbs. Wheat has been purchased at 9s. 6d., 9s. 9d., and 10s. per bushel. Maize has been bought at 9s. and 9s. 6d. per bushel. Oaten hay, slightly pressed, has been purchased at £16 per ton; and £12 per ton has been offered for good lucerne, in stack. In farm produce, bacon is beginning to come in, and has been bought at 7d. per lb. wholesale, lard is quoted at 6d. to 7d. In dairy produce, butter is quoted higher again, fresh, 1s. 9d. to 2s. per lb. wholesale, and salt, 1s. 6d. Cheese of good quality is scarce, and in demand, at about 5d. per lb. or more, if prime; but inferior is difficult of sale, 4d. to 4½d. In poultry, fowls are quoted wholesale at 3s. 6d., ducks, 4s., geese, 9s. to 10s., and turkeys, 10s. to 12s. per couple. Eggs, 2s. per dozen. In vegetables, potatoes have brought £9 10s. per ton, and 11s. to 12s. per cwt. wholesale; small onions, 12s. to 14s. per cwt., large, 11s.; pumpkins, 4s. to 5s. per dozen; 'cabbages, 5s. per dozen. In fruit, oranges are quoted at 4d. to 6d. per dozen, and lemons 1d. to 3d. per dozen wholesale.

GEOGRAPHICAL DISTRIBUTION OF PLANTS.

THE following is an abstract of a Lecture recently delivered at Worcester, by Edwin Lees, Esq., F.L.S.:—

"Originally plants were only valued as furnishing food; and acorns, chesnuts, and beech-mast, had been the first aliment of mankind before the cultivation of corn. After that golden age, magical and superstitious qualities were ascribed to plants, especially if gathered at particular times. The Greeks and Romans considered Pontus, in Asia Minor, as a famous place for dire venomous plants, that would change the very nature of man; and the 'sacred bean,' the fruit of the *Nelumbium speciosum*, was supposed by the greatest philosophers to possess a mysterious influence. In our own country the mountain ash and service-tree were considered antidotes to witchcraft; and this was the reason the elder-tree was seen at every cottage-door, because it had been considered to keep out all unnatural intruders. Agrimony and mugwort, as well as many others, were considered 'plants of power;' the former placed under a man's head threw him into a state of torpor, while the latter gave him pedestrian powers almost equal to the giant's seven-leagued boots! After the invention of printing, and the consequent general spread of knowledge, magical herbs began to be regarded with incredulity. But now another phase in the history of plants occurred. They became 'speed-wells,' 'wound-worts, and 'all-heals;' they were expected to cure every disorder in the catalogue of human ills, and every garden became a little Apothecaries' Hall. This was the *belle dame* age of medicine, when the old woman doctress had much more to do than the apothecary, and worked her pestle and mortar to good purpose. About a quarter of a century ago, one Mrs. Welton, was well-known at St. John's, near this city, as a doctress, and a 'grand compounder' of balsams, syrups, &c., and did a wonderful business in the 'yarb' way.

"Midst leaves and flowers

She dwelt, and knew all secrets of their powers."

He now came to geographical botany, for it was to be observed, that plants, being influenced in their development by soil, by latitude, temperature, moisture, and elevation, the Flora of one country was essentially different from that of another, each region of the land and water being occupied by distinct groups. As striking instances of diversity in vegetation, no rose had ever been found in the southern hemisphere; equinoctial Africa had no *Laurinæ*, and while more than 300 species of *Erica*, or heath, were congregated in the territory of the Cape of Good Hope, none belonged to America, except it was the common ling in the far north. The pines and firs, so abundant in the northern hemisphere, were replaced in the south by *Araucarias* and *Cycadææ*. Islands in the wide ocean had generally a peculiar vegetation; the Canaries had 510 species, and St. Helena nearly

60, that had never been seen elsewhere. So the plants of South America were restricted to that continent, and out of 4,100 indigenous to Australia, only 166 belonged to Europe, many of these, too, accidentally introduced by settlers. Even marine vegetation was distinct in its character, that of the Mediterranean and Red Sea being entirely different. Reference was then made to many local British plants only found in particular spots, as the *Helianthemum Breweri*, on the rocks at Holyhead; the white rock cinquefoil (*Patentilla rupestris*), on Craig Breiddin, in Wales, &c.; and thus a zest was given to the zeal of the exploring botanist in searching out the rare plants thus circumstanced. Heat and moisture were the great instigators of plantal vitality, and where these preponderated, as in equatorial regions, the largest flowers appeared, as the Victoria lily and the monstrous *Rafflesia* whose corolla was a yard across. Here, too, palms and banannas abounded, as also in the tropical zone, distinguished by its cocoa-nuts and tree-ferns. The earth might, then, be divided into zones of vegetation, in parallelism with zones of temperature, till progressing towards the pole, trees became utterly stunted, every trace of verdure disappeared, and a few solitary lichens, amongst pyramids of ice, or a stain of crimson amid wastes of snow, alone testified to the all but extinguished spark of phytological existence. These zones of vegetation were repeated upon the mountains, with their increasing height, in exact correspondence between the decrement of heat from the equator to the poles. On the Alps and Pyrenees, at the elevation of 8,780 feet, it was as cold as the region of the poles at the level of the sea, and though the snow-line was higher at the equator, even there all vegetation ceased at an elevation of 15,200 feet. The size of plants was much diminished on the sides of mountains, but the beauty of natural Alpine gardens, among black ravines and broken crags, was so exciting, that any one who once trod upon such an oasis of beauty long remembered it amid the dusty scenes of every day life. Though the distribution of plants on the earth was clearly governed by temperature, the "Isothermal lines" of mean annual heat did not progress uniformly, and thus the eastern countries of Europe, Asia, and America had much lower temperature than the western, and plants were affected accordingly. In Norway, the silver fir, black alder, and others, grew under the polar circle, while eastern Siberia and the vast extent of Labrador, north of 60 deg., was quite treeless. The limitation of the cultivated plants was next noticed:—Nutmegs, coffee, cocoa, and the finest spices, were limited to inter-tropical regions; cotton, rice, and olives, grew in lat. 45 deg.; the vine, to 50 deg.; while in the west of Europe the cultivation of wheat, flax, and tobacco, ceased at 60 deg.; but hemp, oats, barley, rye, and potatoes, progressed into the polar circle. The southern hemisphere, from the greater accumulation of ice at the poles, was colder than the northern. This was well shown by a comparison of the indigenous flowering plants of our little channel islands, Guernsey, Jersey, &c., with the larger Kerguelen's group in the same parallel of latitude south. The former isles possessed 840 species, but Kerguelen's only 32. The physiognomy of vegetation was next adverted to, those peculiar features of associated plants that the eye at once seized upon, in any country, and connected with early recollection as 'the vegetable forms of our father-land,' seas, mountain chains, by their intervention formed provinces of plants, and thus the greatest diversity prevailed in the clothing of the earth's surface. As striking examples, the forests of Australia and Van Diemen's Land were composed of evergreen Eucalypti; tree-ferns abounded in New Zealand; the singular tribe of cacti in Mexico; acacias and aloes in Southern Africa; and the Himalayan Mountains were the grand capital of the rhododendrons. Fir-forests extended in Norway and Russia for hundreds of miles; while in North America cypresses formed enormous woods and vast dismal swamps. These assemblages of plants fixed the natural physiognomy of countries by their beauty, singularity, or imposing size. The greatest natural families of plants were next detailed in order, but an instance or two of these must suffice. The grasses, of which there were 4,000 species, was a most remarkable group. These forming vast natural meadows, extending for 60,000 square leagues in South America, rose in magnitude according to climate; in Brazil, the grasses were 12 feet high, and a reed

was mentioned by Schomburgk that was 40 feet; while, in India, the bamboos were arboreal, and rose to 100 feet. The palms, the nobles of the vegetable kingdom, were confined to the vicinity of the tropics, but were numerous there, as 120 species grew in South America. The talipot palm of Ceylon towered to 200 feet in the air, while the little *chameroops*, just venturing as far north as the rock of Gibraltar, was in that position as un aspiring as our common male fern under a hedge. The *lianes*, or cordage plants of warm countries, often entangle the tropical forest in an inextricable maze—they rose to the tops of the highest trees and again descended, formed bridges over rivers, and extended for miles from their original source. The fern tribe was singularly affected by moisture, for while 1,200 species grew in the damp forests of the equator, only 144 existed in the temperate zone, and in Egypt, where rain seldom or ever fell, only one species was known. Nations and countries had peculiar features impressed upon them by their plants, and romance and poetry were ready to take advantage of the bright imagery of nature, which thus supplied pictures of a brighter or darker hue, according as sunny or snowy climes, flowery or arid regions, presented their lights or shadows to the brooding mind. But plants were in many instances so limited by geographical considerations, that their localities were placed within the narrowest compass. The Arabs were accustomed to mark their course across the Syrian Desert, by the peculiar plants that presented themselves at certain intervals; and in America the compass-flower of the Prairies, whose leaves pointed to the north, had been celebrated for the aid it afforded the traveller in those boundless wastes. The tea-plant, it was well known, was confined to the hilly districts of China and Japan; but in South America a species of holly furnished another kind of tea peculiar to that continent, and equally prized by the natives. The *quinquina*, or Peruvian bark, was confined to a small district of the Colombian Andes; and cocoa and chocolate were the produce of a plant limited to the warmer regions of South America. Numerous other instances of plantal limitation might be given, as the cow-tree of Venezuela, the tussock-grass (*Dactylis cespitosa*) of the Falkland Isles, the hand-tree of Mexico, whose gory flowers were regarded with awe, and of which only two living specimens were known; and the double cocoa-nut (*Ladoieva sechellarum*) of the Seychelle Islands, in the Indian Ocean, which, till those islands were discovered, in 1789, had been believed to be produced by the sea, and valued as a talisman at a very high price. One more curious plant might be mentioned—the Maltese champignon (*Cynomorium coccineum*), which only grew on the little rock of Gozo near Malta. The knights of Malta had a superstitious veneration for it, and appointed a *custode* to guard the spot, and since Malta had been appended to England, the salary of this *custode* had been paid by the British government, and might be an appropriate appointment for a botanist. The lecturer observed that the manners and habits of different peoples were much influenced by their vegetable products, and the temperature that limited the growth of grain also stopped the progress of the human race; where sustenance was easily procured by fruits and rice, as in tropical regions, the inhabitants were indolent and apathetic, and really only exhibited the highest amount of intellect where *rubi* and bitter wild berries offered little temptation to a lazy dweller in the woods. Plants, however, were the children of the sun, and luxuriated most in heat and brightness, so that when they were transplanted into colder regions they must have additional care and attention, because other conditions arose than those nature had originally provided for. Mr. Lees concluded with eloquent observations on the moral bearings of the subject, resulting from an investigation of the works of nature, and the elevation of thought they inspired."

QUERIES AND ANSWERS.

GARDENING.

VICTORIA LILY IN SMALL TANK.

In noticing this plant blooming (last vol., page 411) at Flitwich House, it will be recollected that Mr. Fish wished to know the means, if any, adopted to keep the water in cir-

ulation. He is glad to find that Mr. Hewitson, who left Flitwich from illness, is now getting better, and has just received from him the following note:—

"There is a pipe leading into the tank, but no waste pipe from it. When I wanted to clear the surface of any slime and scum, I turned the water on and let it overflow all round. Before the plant got to fill the tank, I watered all my plants in pots from it, and then I turned the water on and filled it level full. That was all that was done to stir the water, and no plants that I have seen bloomed better. The *Nymphæas* were grown in small slate tanks in the same manner, and in the same compost, and bloomed most beautifully.—WILLIAM HEWITSON, *Speedwell-road, Bristol-road, Birmingham.*"

[With Mr. Hewitson's and Mr. Week's practice combined, this superb queen of water plants will, no doubt, be oftener seen.]

TEMPERATURES FOR VARIOUS PLANTS.

"Please tell me the temperature required by the following, and their culture; they are not in 'Paxton's Botanical Dictionary':—*Calandrinia umbellata*, *Prinos sinensis*, *Ceanothus papillosus*. *Lopezia macrophylla* I find in Paxton marked 'frame.' What is the difference between frame and greenhouse?—T. W."

[*Calandrinia umbellata* is a neat, low-trailing, rose-coloured annual, that requires merely to be sown in light soil in the first days of April. *Prinos sinensis* we have not the pleasure of knowing, but with few exceptions all the tribe are hardy deciduous shrubs. *Ceanothus papillosus* will do well in a cool house in winter, or planted against a wall. It will lose its leaves in winter. It requires a mixture of peat and loam, and when established to be pretty freely pruned in every spring, or rather spurred-in, as it flowers on the young shoots of the current summer. *Lopezia macrophylla*; we do not know the species you name, but all the kinds known to us are best treated as tender annuals; to be sown on a slight hotbed in April, and transplanted in May. To keep them alive in winter they would require the protection of a *frame*. The difference between the frame and a greenhouse is chiefly this: that in a frame you depend upon the glass, and coverings, if necessary, to exclude frost; and in a greenhouse you depend on fire-heat. A frame and a cold-pit are, therefore, synonymous. We may shortly allude to this more in detail.]

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

IVY AND ROSES AGAINST A WALL.—A correspondent, signing himself *The Cottage Gardeners' Friend*, writes to us thus:—"As I know it gives you pleasure to find that your recommendation and advice have proved useful to your correspondents and subscribers, I beg to state how greatly I have benefited by both. I have a wall some twenty yards long and ten feet high, against which, in accordance with the instructions in your pages, I planted the Irish Ivy and Roses; among the latter, are Bourbon, Hybrid Perpetual, and some few China. The wall has a direct eastern aspect, and nothing can be more satisfactory than the result. The Ivy forms an admirable background, which sets off the beautiful bloom of the Roses to great advantage; both were planted at the same time, so that they have had fair play; and I look upon my ivied wall as one of the most interesting things in my garden."

DEGENERACY OF PLANTS (*G. J. Bell*).—The *Artichoke* will not degenerate into a Cardoon; nor do we believe that Wheat, Barley, Oats, and Rye, will, by any treatment, degenerate into one original. It is generally supposed that Cabbages, Broccoli, and Cauliflower, are varieties sprung from one species, the wild *Brassica oleracea*. We know nothing of the hook you name.

FUCHSIAS (*R. T. R.*).—They were squeezed so flat and so shrivelled that no opinion could be formed of them.

FUCHSIA (*S., Devonshire*).—Sepals scarlet and extraordinarily fleshy; corolla, crimson-purple, apparently of handsome Globosa-like form, but flowers much larger than those of Globosa. The flowers were badly packed.

All Florists' flowers sent for an opinion should be packed in damp Moss, or in pieces of Cabbage-leaf, and enclosed in a box stout enough to resist the post-office stamp.

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WEEKLY CALENDAR.

D M	D W	OCT. 31—NOV. 6, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
31	TU		29.957—29.879	57—45	S.	—	54 a 6	34 a 4	0 50	10	16 15	304
1	W	ALL SAINTS.	29.913—29.788	60—41	S.E.	—	56	32	2 13	11	16 16	305
2	TH	November Moth.	30.007—29.846	60—36	S.W.	02	57	30	3 34	12	16 18	306
3	F	Drab Day Moth.	30.076—29.973	56—36	E.	—	59	29	4 54	13	16 18	307
4	S	Laburnum leafless.	29.944—29.854	53—45	E.	—	VII	27	rises.	☺	16 17	308
5	SUN	21 SUNDAY AFTER TRINITY. [GUN-	29.835—29.773	50—44	E.	10	3	25	4 a 46	15	16 16	309
6	M	POWDER PLOT 1605.	30.050—29.851	58—45	S.E.	—	4	23	5 10	16	16 14	310

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 53.2°, and 38.5°, respectively. The greatest heat, 62°, occurred on the 31st, in 1833; and the lowest cold, 20°, on the 3rd, in 1845. During the period 90 days were fine, and on 99 rain fell.

We beg our readers not to forget that the *British Pomological Society's* First Exhibition of Fruits will be at their Rooms, 20, Bedford Street, Covent Garden, on the 6th of November. We are informed that the collections of Fruits then exhibited will be very numerous and excellent; and every one will do well to contribute and to attend who feels how desirable it is, not only to have our best Fruits more generally known, and correctly named, but genuine information diffused relative to their most appropriate localities and culture.

We have received the Prize Schedules of the following Poultry Societies:—

"*Devon and Cornwall*" (second Exhibition for 1854), at Plympton, on Friday, November 3, 1854.

"*Norfolk and Eastern Counties*," at the Corn Hall, Norwich, on Tuesday, Wednesday, and Thursday, the 14th, 15th, and 16th of November, 1854.

"*Reading*," at that town, on Wednesday and Thursday, the 29th and 30th of November.

At Plympton, we observe, that but one class is allotted to "Dorkings;" so that coloured and white must compete together. We think it would have been better otherwise; as, also, that admission should have been given to the several varieties of "Bantams," not included in the "White," "Black," "Gold," or "Silver" pens. The Shanghaes are limited to the "Buff or Cinnamon," and "Brown or Partridge." If, by this deviation from the usual form, an opinion is advanced that these colours alone severally represent the true features of the breed, we should be far from offering a distinct contradiction; but many breeders, we imagine, will consider that the evidence in support of this view is hardly, as yet, conclusive. The birds of the year are to be shown as "three chicken," irrespective of sex. The regulations are clearly announced, and the form of entry provides for all necessary details. We are glad, also, to observe an announcement, that the Railway Companies are liberal, and that the prizes may be taken either in money or medals.

At Norwich, the prizes are on a liberal scale, and the schedule generally well arranged. Our disapprobation, however, of "Brahma Pootras" being placed in a position distinct from Shanghaes, will, of course, have been anticipated; and we may here add, that nothing has recently been brought to our notice that in any way

opposes our previous conviction that these birds are, at the best, but "Grey Shanghaes."

The same observation with regard to Bantams applies here and at Reading, as at Plympton; but a class for "any other variety" can hardly be better bestowed than in this instance, more especially when we remember the beautiful specimens of the "*Game Bantams*," that have of late attracted such well-deserved notice.

The "Norfolk" Turkeys are to be shewn separately, and "Committee-prizes" are wisely offered for the best male birds of the "Shanghae," "Spanish," "Dorking," "Game," and "Hamburgh" breeds. The schedule is concluded with an offer of cottager's premiums for "the best collection of useful Poultry, not less than six in number." A statement of the relative numbers of each variety, and a fixed proportion of sexes, would, probably, have produced a better exhibition, and certainly have lessened the labours of the judges. The rule that imperatively requires an exact statement of the age of chicken, as "*in that class a wrong statement of age will be held as a disqualification*," will rack the brains of many a conscientious exhibitor, even among those whose poultry-book minutes have been most accurate; in such cases, at least, as the numbers bred have been considerable. It is, doubtless, desirable for the judge to be acquainted with the various ages of competing pens; but, hitherto, the information that has been proffered on this head has seldom been satisfactory, and awards, based on such individual statements, even where there has been an entire absence of all intention to mislead, have rarely been found practicable. Positive evidence, moreover, of incorrectness in the returns, and of the consequent liability to disqualification, will be often difficult to obtain. We apprehend, therefore, that in all ordinary cases, a better system is simply to require an assurance of the birds being "*above*," or "*under*," one year old.

At Reading, the "White" Shanghaes are invited, but the "Black" passed over; the latter, certainly, are far more justly consigned to the ignominy of the bar sinister than the former; but our knowledge of the family is as yet far from complete.

We must remind the officials of this society, that "Hamburghs" should always be arranged according to their markings—not their colours. Thus, the Silver and Gold Peneilled should follow each other, and then the Spangled in their varieties. Their position in this list separates an universally-admitted connexion, and

also places in unwise alliance birds of most distinct features, for such the "Pencilled" and the "Spangled" Hamburgs may be fairly termed.

"Aylesbury" and "Rouen" Ducks are alone mentioned. This we regret; for the beautiful Black East Indian, and several varieties of the common Ducks, are, in every point of view, entitled to admission.

The rules and regulations follow the ordinary course.

The *Birmingham Society*, it will be remembered, have, within the last few weeks, made an important and most valuable addition to their schedule for the present year, by giving further prizes for single cock birds. Their attention is announced in the following terms:—"In addition to the prizes enumerated in the list issued on the 23rd of February last, the General Purposes Committee of the Council have resolved to offer first prizes of £2, and second prizes of £1, for Single Cock Birds, of any age, of all the following varieties, namely: Dorking, Spanish, Cochin-China, Brahma Pootra, Pencilled Hamburg, Spangled Hamburg, Game, and Polish; and that the same shall be entered under letters A to H on the ordinary certificates."

The principle on which the seven silver vases were offered for the best pens of several breeds having been in some instances misunderstood, we insert the following authoritative explanation from the *Midland Counties Herald*, of October 19th:—

"The Council this year also offer seven silver vases, of the value of six guineas each, instead of money prizes, for the best pen of Pencilled Hamburg, Spangled Hamburg, Polish, Spanish, Dorking, Cochin-China, and Game Fowls. The manner in which these distinctions are to be awarded is, probably, not well understood, and we may mention, in explanation, that in Spanish fowls, for instance, the pens taking the *first* prizes in the adult and chicken classes, will compete together for a vase, which the winner will be entitled to, instead of a first prize of £3, and so on with the other classes, with the exception of the Hamburgs and Game fowls. In the former, the Spangled, both gold and silver, compete together for a vase, as will also the two varieties of Pencilled; while the first prize Game pens of all colours will take part in a similar contest. The fowls shown this year by cottagers will all be arranged together, and it is intended to award liberal prizes for good specimens. The subscription giving the right to exhibit Poultry has this year been raised from 10s. to £1, and the number of entries is now limited to *four* for each subscriber, the classes for single birds being considered part of the general show, and included in this arrangement."

We have every reason to believe that the liberality that has directed these additions to the ordinary prize-list, and the general arrangement and classification of the exhibition, will be so appreciated as to render the show of 1854 in no way second to its predecessor. With the recollection of the general excellence of the poultry that were assembled in Bingley Hall, in December, 1853, we would not venture to speak too positively of a still further advance, though, in some few classes,

this will doubtless be attained; and we hope more especially to witness the restoration to their proper place of the adult Shanghaes, so poorly represented on the last occasion.

WINTER-PRUNING.—THE GOOSEBERRY.

ALTHOUGH the earlier volumes of *THE COTTAGE GARDENER* contain ample directions for pruning, yet we feel it a duty to recent subscribers to return, occasionally, to such subjects as the present, and the more especially, that every year enlarges our ideas, and furnishes fresh hints for progress. It will be well, therefore, to take a fresh glance at pruning, as a most timely affair. Those who have taken our advice during the period of growth, will have but a very moderate share of labour to perform, as compared with those who have neglected this important duty, which is not only agreeable to the highest cultural principles, but essentially economical, inasmuch as a days labour in June or July is fairly worth two in December.

I will begin with the Gooseberry, which may fairly form the commencement of the pruner's labours, and a fruit scarcely second, in general utility, to any. It is known that Gooseberries are of very different habits of growth; some, as the *Champaign*, shoot almost perpendicularly, whilst others, as the *Warrington*, and several of the larger kinds, bend archwise downwards. This requires that the "shortening back" vary slightly in its character.

When bushes are very coarse, and of strong growth, our practice is to run the shears lightly over them first; this enables the operator to introduce his hand with greater freedom into the interior of the bush. Thinning-out is the first procedure, and the degree to which this is carried varies slightly with the character of the bush. Such as are weakly, and have borne rather too heavily in former years, are handled rather severely with the knife, in order to enable them to make a livelier growth; this is a restorative proceeding. In all cases, however, it is bad practice to suffer much bearing wood to remain in the interior of the bush, it is there difficult to gather the berries, and, indeed, the produce there is by far inferior to that at the exterior. We cut nearly all the interior spray away, merely leaving shoots qualified by their position and character to sustain the symmetry of the bush, and those cut away are pruned as close to the stem as possible. Nothing looks worse than a bush almost as thick as a hedge, with a multitude of half-starved berries, scarcely above a third of the size the kind is able to attain. Our market-gardeners, who grow acres, well consider the consequences which result from bushes crowded in the interior; they know that such seriously affects the labour question; badly-managed bushes cost thirty per cent. more to gather from than those under proper management, and the produce is depreciated in like manner; added to this, the bushes cannot last so long.

Enough has now been shown to suggest the propriety of a liberal thinning. It is difficult to show a novice in this practice how much to remove, but as a sort of rule, I should say, that were it possible the shoots could be made to grow in parallel lines, they should not remain closer to each other than four inches. Let us then say that the shoots should be thinned to three or four inches apart. Now, we have, of late years, adopted another practice, which deserves a consideration; this practice has, I may say, been forced on us, through the serious depredations committed by the birds, as, also, by the damage occasioned by late spring frosts. It consists in leaving nearly twice the amount of young shoots that we do by a regular system; we, of course, carry double chances of a crop, as to the

injuries complained of. This is done, however, with a full intention to prune away in April all supernumeraries, providing the fruit has escaped the mischiefs complained of. I must confess that this is not the most systematic plan, but it sometimes provokes a serviceable one. As to the birds destroying the buds in the act of germination, I feel tolerably assured that some nauseous mixture applied by the syringe, or by hand, will keep them at bay for this spring. I had several bushes syringed with soft-soap water, in which was a little sulphur, and then dusted with lime, and I am not aware that the birds visited them after; this was done the moment the birds commenced their attack.

But, to return to my pruning; the thinning being done, the shoots should be shortened, and that for several reasons. In the first place, the points of the shoots are apt to be immature, and, of course, the buds of a trivial character. Secondly, if left unshortened, they dangle so low, in many kinds, as to produce confusion, and to impede the gathering, and many of the lower shoots will get their produce splashed with mud in rainy weather. Besides this, shortening stimulates to a smarter kind of growth in the ensuing year. All these reasons, doubtless, may be considered as concurring in a recommendation of the shortening system; but all kinds need not be shortened alike, neither all of the same kind. The pruner must judge by the character of the wood, remembering what he shortens for. As a tolerably safe maxim with fair growing trees, about one-fourth of the length may be removed; our readers will, notwithstanding, have to take considerable liberties with this rule, when the bush is not exactly of ordinary character. It may here be observed, that bearing wood should not be left so near the ground as we sometimes see it; no point after pruning should be within six inches of the soil, if possible; upright growers excepted. For this reason, I think it is an error to put out short cuttings, every one should be quite a foot above ground after insertion. We all know that the Gooseberry may be trained to a tree with a stem four to five feet in height; then why such short stems, at all times perilling the character of the lower fruits?

Those who want to propagate for future stocks, should collect carefully the very finest shoots as soon as the thinning is completed. They may be at once named, tied in a bundle, and "heeled;" or, what is better, trimmed and planted-out at once. It is customary with some to put them in a shady place, but this is bad practice, and only justifiable when the cuttings are made late in spring, and scarcely then. I am well aware that they may occasionally root with more certainty, but the shoots they make are puny, and it is essential to the future welfare of the tree that the young bush make a sturdy effort from the first.

By planting the cuttings directly they are pruned, however, not one in a score will miss, and by means of a generous soil, and an open situation, they will make two or three nice robust twigs the first summer, and these, with a little pruning, will form permanent heads in the following year. Let me, however, caution our readers against planting the cuttings too thickly. If in rows, they should be allowed six inches between each two cuttings, and eighteen inches between the rows. This is my practice; and in the next year I take out alternate plants in the row, and transplant them, and those left make excellent bushes forthwith. It is nonsense for gardeners to imitate nurserymen as to planting cuttings thick; with them it is a question of how many plants can be got off a given space of ground. Not so, however, with our amateurs and others. In trimming the cuttings, every eye or bud but the four topmost should be scooped clearly out, or "blinded" (before insertion); the four are left to form the head, and if three or four break, it gives a chance of selection at

pruning time. The lower eyes are blinded in order to destroy the power of the bush to put up suckers, which are ruinous to the welfare of the bush, and if it possess this habit, there is no getting rid of it. Let this point, therefore, be carefully attended to. And now I may as well offer a little advice about other autumnal proceedings.

As soon as the bushes are pruned, and the ground raked, a surface-dressing should be thought of, for I strongly advise a slight annual addition in this respect, if only old thatch, or any decaying material which will not produce weeds. It must be a poor bush that will not return about twopence in manurial applications; and if persons will persist in this, and keep the spade away, they will find their bushes last for a score years, or more; providing, also, the caterpillar and other pests are kept under. As for digging amongst them, we might take a lesson from the hedge Gooseberry. Who has not seen and admired those little minie, come-by-chance, hedge Gooseberries, and observed, on each returning spring, the unassuming little bush budding and blossoming away in spite of the gigantic monopoly attempted by his more powerful neighbours, the White-thorns of the hedge? So it is plain they will thrive without so much fussy digging. As for those of the market-gardener, they are no rule for private gardens; he depends as much on his crops between for profit as on the bushes; and, indeed, the amount of manurial matters buried by these high-farming gentry, doubtless, compensates for that root-cutting which must take place by a free use of the spade.

But these things admitted, we should consider whether we cannot, according to the adage—"Kill two birds." There is the fearful caterpillar, which, unless destroyed, may neutralise all our efforts. Now, I remember, that about a score years since, the late Mr. Loudon had concluded that the very best plan was to dig a trench around each bush, and to scrape or rake all the decaying foliage together with the surface of the soil, for two or three inches, into the trench, stamping upon it, and covering it with fresh soil from the bottom of the excavation.

I, for one, believe this to be good practice, having had better success when I did this, than, occasionally, since; and I have here to confess, that with me the practice had fallen into disuse through pressure of work, for I am not coward enough to bend to the imputation of indecision. But it is not really necessary so to dig the holes as to injure the bushes; as for scraping off three inches of the surface, why all I can say is, that it involves the necessity of a surface-dressing as an equivalent. So far, so good, for the system I suggest.

Let, therefore, our readers revive this reasonable practice, which is, or professes to be, based on the natural habits of the Gooseberry caterpillar, with which, practically, every Gooseberry cultivator is but too well acquainted. It so happens, that the mode of destruction proposed is calculated to act in concert with the mode of applying an annual surface-dressing, as here recommended.

R. ERRINGTON.

FLOWER-GARDENING.

THERE never was a better autumn for the flower-garden, everything ripened to perfection, and nothing was hurt by the frost; no equinoctial gales to knock about Hollyhocks, Dahlias, and other tall plants; the hot, dry weather through August and September kept the ground so warm, that the first October rains made a hotbed of it, the short grass began to grow afresh, as if it were spring, and now is the time to feel the luxury of a mossy lawn, morning and evening. If moss could have been destroyed by the short-sightedness of well

meaning people, who raised an outcry against it, some English turf would hardly be fit to walk upon by this time; we should have nothing better than the muddy worm-casts in winter, and a husky, hard, dry, harsh bottom for the rest of the year, only fit for iron heels and hob-nailed shoes. Early frost is the worst of all for carpet moss; it stops the grass from growing, there is no bite for the scythe, and the moss rules the roast till next March or April; then, and under this state of things, moss does a great deal of harm by choking the finer grasses, and occupying their place. In our climate the scythe should not go to rest, on the average of seasons, till the end of November, and that solely for the sake of the moss, which requires to be kept down in October and November, with as much care and diligence as we apply to short grass in March and April. English lawn-moss has the same habit as Tulips and Hyacinths; it begins to grow soon after the middle of September, and goes on growing all the winter and spring, but goes to rest for the summer. Now, if it is neglected all the time it is in growth, how can it be expected to improve the lawn? Another most extraordinary fancy took hold of people's heads, about getting rid of the worms on the lawn, as if they were not industrious enough, and the best fertilizers in the world; were it not for the worms, our lawns, in a few years, would be worse off than if there was no moss at all; what with mowings and sweepings, and other necessary hardships, the surface of the lawn would soon wear patchy, were it not for the worm-casts. It is true, we might sift good mould, wheel it on the lawn, then sweep it about, and when it was quite dry roll it in, just as nine men were doing under the north wing of the Crystal Palace, the last day I was there; but it is equally true, that we might forget all this at the right time, nine times out of ten. The worms, however, never forget the right time, and they, in their way, compel us to look after our lawns just at the time when we might think lawns could take care of themselves for the rest of the season. The worms and the moss had a rich harvest of it this time, like the rest of us, and the consequence is, a nearly double the usual work to keep the grass in good order, with the full assurance, that those who live the longest will find the benefit of all this sweeping, scratching, and rolling. Very fine-sifted coal-ashes is the best of all dressings for a good established lawn, but for new places, or where the surface of old lawns is patchy, the plan at the Crystal Palace is the best, only that it should not be done till after the last mowing for the season; it was not for feeding or encouraging the grass that they were laying on that rich loam at the Crystal Palace, but in order to fill up cracks and fissures which the dry autumn made in their stiff clay bottoms, the quantity they put on was just sufficient to fill all these rents, and no more, and they might mow over it next time without disturbing the dressing. Where moss has been neglected, and has got the mastery over the grass, in some bare places, now is the time for a good scratching over the moss with an old rake; after that an old birch broom, which never sweeps clean, is the best to tease and gather up the moss; after that a few handfuls of grass seed thrown over the place (and November is an excellent time to seed *old lawns*) will improve it sooner than anything, if a little sifted earth is put over the seeds, and the whole is well rolled when the surface is perfectly dry; but it stands to reason that no more sweeping, or disturbing of the surface should be done for the rest of the season, only the roller now-and-then during the winter, and after frosts, when the grass is perfectly dry; but for a lawn that has had no amendments this autumn, the grass may be wet or dry, as it happens, and roll equally well.

WINTERING HALF-HARDY PLANTS.

There are more prospects for a lucky hit at keeping

half-hardy flower-garden plants this winter than we have had for years past, and, therefore, the more stimulus for us all to push our practice in this department farther than some people could dream of years ago. Old specimens of all plants for the flower-garden are most useful in May, and every plant that can be saved from the frost should be looked to at once; damp is more to be dreaded, however, at this early season than frost; see, therefore, that none are crowded into damp pits at first taken up; a certain degree of dryness is essential now, whether plants are potted or merely kept loose in their balls, so that sheds and outhouses are more useful just now than closer quarters. I have cut off every one of the old leaves from all my own Scarlet and other border Geraniums, and I have close pruned many of them, all but the strongest shoot, for training them into pyramids another season; then, after cutting back the roots a good deal, I got as many as eight two-year-old *Tom Thumbs* into No. 16-pots, and adding one-third dry sand to good mellow loam in a dry state, I was able to shake it well among all the openings between the roots, then a good watering, and exposure under the walls of the garden, with mats stretched over them at night. Here I shall keep them out as long as it is safe, and meantime they will ripen better, make young roots, which can work very freely in the sandy compost; and those of them which I must keep dry for want of room will be better able to bear it than by any other means known to me. I shall not let the soil get quite dry about them before Christmas; in the meantime, I must look over all their wounds two or three times, and cut off a little here and there wherever I see symptoms of decay. Nothing is more dangerous during the first two months, after much pruning at this season, than the festering of wounds at the ends of soft branches cut off, and the only remedy is to cut back a little to the quick again and again till the parts are dry and firm. Ten days ago, I cut back all my older Geraniums quite into the hard wood, not a leaf was left; the roots were also closely pruned. I put them in by the heels in sandy soil, rather moist, and in an outhouse, where I can cover them over with mats, and keep a smart frost from them; they are beginning to root famously already; their heads will be as dry as faggot-wood before I shall have to put them down in the cellar, and then a little moist soil about their young roots will keep them fresh all winter without damping the hard branches.

These are the sorts of plants to keep plunged in pots all next summer, where Geraniums go too much to leaf, and do not flower so free on that account; depend upon it we have a good deal to learn on this head yet. I never needed to plunge pot-plants at Shrubland Park; the situation is so dry and airy, that all plants flowered better in the autumn than at any other time; but I well recollect, the last year I was there, I had to make up a bed under the Albert Tower at the end of June, with pot Geraniums in full bloom; they were all odds and ends, some young, some old, and some very old indeed; but the very oldest answered best, and some of the best looking, at first, being the youngest, did not turn out so well as I expected. After the first flush of bloom was over, the rest was not much to boast of in comparison to the old stumps, which most people would be afraid to venture in one of the most conspicuous situations about a place, but that bed opened my eyes to the value of old Geraniums, and if it had not been my lot to be at work near the sea, on the west coast of Argyshire, whence we had an excellent communication this very day from "A Lady," I should keep every morsel of my very oldest Scarlets, and prune them just as close, top and bottom; as I have just said, keep them out of pots all the winter, very dry overhead, but with a little moisture round the roots the whole winter; towards the end of March I would pot them singly in 32-sized pots, and in a very

rich soil, keeping the roots as low down in the pots as I could cram them, as plunging over the rims would be sure to entice the roots to rise to the surface, rather than seek their way through the bottom-hole; and if I did not have a better bloom of Geraniums next autumn than was ever seen on the coast of Morven before, I would never roun the Mull of Kintyre again for Geraniums, or anything else in the gardening way.

I think I have already told of an *old Geranium* I have with a stem as thick nearly as my wrist, it is now nine years old; and last year, in September, I cut it as close as I dare without actually killing it, and I declare I got it comfortably into a 48-sized pot, which it filled with roots in less than three weeks; I then put it into a 32-pot for the winter, and in March I shifted it at one jump into a No. 12-pot, in which it bloomed as no Scarlet Geranium ever bloomed before. I intend to keep this plant as long as I live, for two reasons; the first is a private consideration which affects no one but the owner; the second is to prove to the gardening world that any one of the Scarlet breed of Geraniums can never be too old to bloom extraordinarily well, provided it is managed well; but there is nothing new in the idea; I heard it asserted just twenty-nine years since, by one of the best growers of the tribe in those days, the late Lady Cumming Gordon of Altyre, in Morayshire, who was the first to plant flower-beds in masses of one or two kinds.

I never tried, or saw the plan of hanging up Scarlet Geraniums in the cellar, but unless the cellar is damp naturally, I see no reason why old Scarlets thus prepared should not keep by thousands that way. At all events, I am satisfied that we shall never succeed in keeping our bedding Geraniums in a dry state over the winter, except as by mere chance, until we learn the proper management, and the value of old plants of them; and I foresee the difficulty that must always attend our experiments in flowering beds of them in plunged pots, until we learn and acknowledge the fact that a Scarlet Geranium can never be too old for a flower-bed; but I forgot to mention one of the best properties of my nine-year-old plant, which is, that the leaves are now only about half the size they were when it was a "seedling."

Well, talking about seedlings never tires one either. I have a thousand of them at this moment, and many not up yet. I sowed the last batch in the middle of October, and, as I never think of transplanting seedling Geraniums in the autumn, I hit upon a plan this season which, it seems to me, will answer remarkably well. A full ear, or beak, of Geranium, carries five seeds. As soon as the covering of the seed begins to change colour, I cut it off a little below the *torus*, or thick part to which the seed is fixed, and sow it, the same day, close by the side of the pot. The whole of the beak stands out of the ground; so that, if I do not have enough to fill round my pot to-day, the upstanding beaks will show me where to begin *planting* my beaks to-morrow, or whenever it may be. I allow two inches from one beak to the next—at least, I ought to do so; but really, when one has so many, there must be exceptions to general rules now and then. The best size pot is the 48. If all is well, five little seedlings rise, in a lump, from each beak, or head of seed; but they are entirely free from the others, and their being so close together, and in contact with the side of the pot, they assist to drain better than single plants, at nearer intervals; besides, a pot holds more than double the quantity of seedlings in this over the usual way; and, if one or two out of a five-plant patch dies in winter, there are still three chances that each crossed flower will give a seedling, which is the greatest comfort of all.

By-and-by, the seedlings will touch one another all the way round; but that is no hurt—if they do not meet their leaves across the pot all will be right enough; but early-sown ones will meet across a 48-pot

occasionally, as early as October; but no one in his senses would transplant them at that season, unless, indeed, he had a strong dry heat for them; and if he had, he might pot off seedlings of any Geraniums all through the winter with little risk. Now, the plan I have adopted this season, for the first time, is to obviate this difficulty—seedlings covering the whole top of a pot. Gardeners may also find the plan useful for stove pots of tender cuttings, and other things; whatever the size of the pot, cover it with a bell-glass that will leave sufficient room for the row of seedlings, or stove cuttings, between the edge of the glass and the side of the pot, the inner leaves will then lean against the dry outside of the glass, and never damp, or cause dampness, to the soil. The pot will not require a quarter of the attendance in watering and looking after it; the moisture which rises from the soil is condensed on the inside of the glass, and trickles back again, as in a Wardian case, so that the little space of free soil in which the seedlings stand need seldom be wetted at all, and I am sure the plan may be applied in different ways with economy; but I shall report on it again. I am highly pleased with my last year's seedlings, but as I am on quite a new track I have little more to say or boast about. My best White, of the Horse-shoe breed, had ninety-six flowers on the only truss I allowed to come; this will beat, by fifty or sixty flowers, any truss of pure white which we have yet seen; but the bother is, out of fifty-seven pure white-flowered seedlings, not the smallest improvement is perceptible in the *substance*, or *shape*, of the individual flower. Perhaps we shall have better luck next time. In pinks and purples of the same breed I am the richest man near London, at any rate; but here, also, nothing is yet good enough to keep up the old credit of my shop and firm; but better times are coming for us all.

D. BEATON.

NOTES AND GLEANINGS FROM ALTHORPE GARDENS.

(Continued from page 62.)

WALKS.—I have been told that a very pleasant and beautiful walk was made at Abbotsford, when all the directions given by the author of "Waverley," to his faithful woodman, and factotum, Tom Purdie, was "to make it neither straight nor crooked, but just as he would walk, or rather *dander* across the space in going home in an evening;" and the chronicler relates how successfully Tom embodied the idea of his loved master. I have often been amused by the circumbendibuses left by different individuals on the wet grass, as they went from one point, as they thought, straight to another; the bonds and twists in the route, without ever such a thing being thought about, evolving much of these graceful turns that by artists have been denominated the "line of beauty." Walks with graceful curves will ever, therefore, be the most pleasant to walk upon, just because we would naturally take something of these turns when sauntering along in a contemplative mood. Starting from such a good idea, many, lacking the mother-wit sagacity of Mr. Purdie, have never known where to stop in their convolutions and twists; just as in the case of a parsonage not a thousand miles from hence, where, at no great distance from a straight boundary, the walk is so serpentine, and in-and-out folded, that how a studious man, with a book in his hand, as we might expect a pastor to have, could thread these windings in a summer's evening without leaving traces of his hands and knees, by a sudden somersault on the grass, from his feet coming in rude contact with the out-jutting corners, was a problem past my powers of solving. But notwithstanding our line for graceful and easy curves in walks, there are circumstances in which they

would be wholly out of place. Who would think of showing their curving abilities in close contiguity to the straight lines of a noble mansion, or pirouetting their convolutions between the two rows of trees that formed a splendid avenue. In this, as well as many other matters in life, the *lesser* must yield to the *greater*: and the line of the house, and the direction of the avenue, must be the sole guide in forming the walk. On this principle, the main walk that leads from the house, as Althorpe, should, for a space at least, be straight, and for other reasons mentioned, and if the ideas of unity of expression, convenience, extension, seclusion, &c., are to be taken into consideration, that main walk to the pleasure-grounds should go straight, and at right angles with the building.

These remarks will, in the meantime, be a sufficient reply to various questions on this and collateral subjects, more particularly if we add, for the sake of young friends, that in performing their ground-work operations, they will give most satisfaction to themselves and others, if an apparent reason should be obvious for every group and clump standing just where they do, and a similar reason should be apparent for every curve and sweep of their walks being just as they are. Hence, in forming new walks, where nothing interferes with having curves and sweeps at pleasure, the thorough enjoyment of them afterwards will depend upon the taste of so placing single specimens and groups, as to make it evident that after such arrangement, that, and no other curve, was the right one.

A great objection against carrying out something like the idea of *width* and extension of walks at Althorpe, is the difficulty, if not next to impossibility, of getting good gravel. It seems deficient in stony matter, consists chiefly of fine sand, with a mixture of earth, and has little adhesive or binding properties. I have had many enquiries, during the last season, as to obtaining firm, smooth walks, but I could add nothing to what has previously been advanced in *THE COTTAGE GARDENER*. It is a very expensive thing to get great quantities of gravel from a distance, especially when people will persevere in first making something of a ditch where their walk is to be, instead of making it almost on the hard, firm surface. Various remedies may be resorted to, which I have either tried, seen, or used with good effect. A bottom of chalk well wetted and rolled, and just enough of such sandy matter placed on the top, as when thoroughly rolled would incorporate with the saponaceous chalk or limo, and yet retain a sandy, gravelly surface, will always be smooth, clean, and very lasting. Those wishing to try that scheme, should get acquainted with the ample experience of Mr. Beaton, as detailed in a previous volume. I have also seen fine walks made with such sandy material, by incorporating with it a portion of clay, and that in two ways. First; getting the clay very dry, and then mixing it with the sand; and, secondly, placing the sandy matter on the walk, beating up the clay into a thin puddle, pouring it over the walk from the spout of a water-pot, incorporating the mass a little with the teeth of a rake, and then, whilst wet, adding as much sandy gravel as will roll firmly in and leave the sandy matter on the surface. A third mode I will mention has already been alluded to, and, from my own little experience, I am confident it will one day be more used by those who love dry, firm walks—namely, a coating of coal-tar from the gas-works, of which there seems to be plenty at Althorpe.

The first essential to success is a smooth, hard surface; it matters not what it is, whether earth, or an old gravel-walk covered with weeds. On this spread the tar just as it comes from the gas-works, thinly, with a clean spade or trowel. I have found the thickness of a sixpence thick enough for ordinary seasons, but a severe frost would be apt, as I have found, to heave it up. The

thickness of a shilling would be better, and where plenty of tar was come-at-able, I would spread it about as thick as half-a-crown, or more. On this, as you go along, throw on your sandy gravel, as dry as you can conveniently get it, from a quarter to half-an-inch thick. If not thoroughly dry, let it dry a little, then roll, and keep putting on a little more, until the surface is quite smooth, and every trace of tar obliterated. A piece of walk was so done nearly two years ago, and it has been smooth, firm, dry, and clean, having had nothing done to it, except clipping the edges. The tar was very thin, not much more than a wafer, and I was afraid the frost of last winter would heave it up, but the snow saved it. I believe Mr. Judd intends using it as a trial round his pits in the first place. The best time to apply it is spring, summer, and autumn, in good dry weather. The great and chief objection is the smell, as that will be felt for three months, and even longer, in particular close, muggy weather. But then some people actually like it, and when gardener's employers do not, and they still wish to use it, it should be put on when their employers are away. *There are many modes* in which the tar might be mixed with the gravel before laying down, and this might be necessary in the case of roads with much traffic over them; but for walks, nothing answers better than spreading the tar over a smooth surface, and then giving it as much fine gravel as it can absorb, so as to have a gravelly-coloured surface. Sand drift from a road-side answers well when dry. The walk must be properly rounded before the tar is applied, so as to throw off the water, as none will pass through it when properly done.

There are few places where there is such room for indulging variety of tastes for positions for flower-gardens as at Althorpe. Besides my growing-likeing for *what is*, I think much judgment has been displayed in having the pleasure-grounds on the east side of the mansion. Supposing the Conservatory built,—a neat, pretty garden might occupy the space between it and the wing of the library; but then there would be a deficiency of sunlight from the shade of the mansion. Splendid groups might be made in the park on the west side, so as to be brought under the view of part of the library, the drawing-room, and dining-room; but then the champaign look of the park there would be broken, and the pleasure of having cattle coming close to the mansion destroyed.

KITCHEN-GARDEN.—The first sight of the interior tells you, that in the contest between the extreme of neatness, and the extreme of luxuriance, and fine, useful products, the first was made to give place to the latter. Mr. Judd informed me, that he could scarcely keep weeds from seeding, though he used a short scythe at times to chop off their heads, as well as the hoe and the spade to cut up and bury them. No sooner was a piece of ground turned up, but ere long the surface was as green as a lawn. The garden, some years back, had been held chiefly as a mercantile concern, and weeds had been allowed to prosper in such a way that the ground was thoroughly filled as a storehouse with seeds that just wanted air and elbow-room to germinate and grow. Perseverance, and a few more boys keeping Dutch hoes continually going, will, in time, lessen, if not eradicate, the evil. The allowing a garden, from whatever motive, to become thoroughly stored with seeds of weeds is no trifling matter, and the neglect of a season or two will tell on many future years.

But, if Mr. Judd was inclined to grumble a bit over his active opponents, the weeds—he could not, with any face, show any discontent about his crops. From what he told me, the ground, naturally, was a blue, loamy clay, and not at all over-productive. For some time, he had great difficulty with Asparagus, and other vegetables. His chief resource, in addition to manuring, was deep-

digging and trenching, and an abundant supply of *burnt clay earth*, and all parings of roads, &c., he could get hold of. Outside the garden he has got two massive heaps, steaming away now, containing, I should say, more than a hundred cart-loads. He did not seem at all particular about the material; everything in the shape of earthy and clayey matter was made to yield its quota. The whole process of action seemed extremely simple. A few armfuls of prunings and other woody rubbish are laid in a heap, are covered with some dry, grassy sods, and the fire lighted, and, as the sods and earth become ignited, more are being continually added. The summer is the best time for doing this; and, although I have done a good deal myself, I have been obliged to do it in winter and spring, when the wet was much against me, as the smoke at any other time would have been voted a nuisance. Under my limited practice, I succeeded best with conical heaps; but Mr. Judd's were only some three or four feet high, and flat on the top, but of a large diameter, the heat being made to travel from the centre to the circumference. Finding the soil in the orchard almost unworkable, the greater part of the surface of it has been burned. I see that some one wishes for a full explanation of the modes of burning clay, and I would be glad if Mr. Judd would give our readers the benefit of his experience. Almost everything likes a little of such material. It is generally allowed that we are pretty successful with our bedding-plants here, though neither soil nor situation are most favourable; and I attribute it, in a great measure, to each plant having a handful of compost, of which this burnt clay and earth forms fully one-half.

Asparagus.—I have mentioned that at one time this was small and hard, and now it is luxuriant and well-flavoured. Several beds are sown every year. A large trench is dug out, and this is well filled with vegetable refuse, dung, &c., incorporated with the soil, and well mixed with the burnt earth, especially towards the surface, the ground in the intervening alley being also thrown on the bed, so that the beds seem so many rounded ridges, and the mulching and top-dressings keep them moist enough. I consider this a capital plan in all stiff, clayey soils. In sandy loam, with a dry bottom, the plant does best on a level surface. Besides forcing these beds, as they get old enough to be taken up there is a bed in two divisions, surrounded by brick walls and pigeon-holed linings, and lights which fit other frames are used for these pits during the forcing of the *Asparagus*; one-half of the pits being used every alternate year. Some other beds are planted so that they may be bricked round in a similar manner when required.

Snow's White Brocoli.—There was a most splendid large quarter of this fine Brocoli, and every head true. I have next to missed it this season, as Mr. Snow saved no seed last season. There have been great complaints about this and other vegetables. Plenty of it has been sent out, when it was next to impossible it could be true. Mr. Judd was fortunate in saving a fine quantity of seed which could be thoroughly depended on.

Red Beet.—Of this I noticed a beautiful quarter, the sort having been in the family for about forty years—dark and black to the core.

Brussels Sprouts.—There was a very fine quarter of this, the plants all equal in size, compact, and rather dwarf. The popular opinion is that this vegetable deteriorates unless received yearly from the continent. Mr. Judd combated this idea years ago in the *Gardeners' Chronicle*. The same sort has been grown by himself and father for forty years. But I must stop with one word—

Keeping Seeds.—Some years ago, Mr. Forsyth condemned the paper-bags in which seedsmen send their wares to their customers, and recommended small tin

vessels instead. For all his favourite seeds, when thoroughly dry, Mr. Judd uses wide-mouthed bottles, corked and bladdered, and then placed in a dry cupboard in the kitchen. He has found vegetable seeds so kept as good when a number of years old as they were when saved.

Fruit.—There was a great scarcity of Apples in the orchard and garden, but abundance of Pears on the walls, Apricot-trees were looking well, and had borne a heavy crop. They were protected with straw covers, moved aside during the day, except when used for retarding. Peaches out-of-doors, Mr. Judd next to resolved to give up in despair. Strawberries in the ground and in pots looked well. I was anxious to see his *British Queens* for forcing next season, and did not think them superior in appearance to what we have got in this neighbourhood; and recollecting the splendid fruit he exhibited at Northampton and Chiswick two years ago, I must come to one of three conclusions:—A great many pots must be in fruit at one time; the fruit must be very much thinned; or, there is some little quirk in the management which many of us have not got.

Forcing Houses.—Everything about the glass department spoke of order and neatness. In the larger range the houses are wide and lofty, and seem, at one time, to have been used as Pine-pits as well as vineries. They contained good crops of late Grapes, chiefly *Hamburgs*. One division was used as a plant-stove. Among the plants I noticed a fine specimen of *Beaumontia grandiflora* in a large pot, with the points of the shoots set with flower-buds, which will make a fine display next spring; peculiarly large fine-coloured blossoms of *Bignonia venusta*; and fine plants of the various *Allamandas* and *Dipladenias*.—Mr. Judd remarking how much these two latter rejoiced in bottom-heat in spring. In the Peach-house the wood was beautifully ripened, and in fine order. Here I noticed a very simple and quick mode of giving air in front, by pushing out the front sashes, which were hinged at the top. An iron rod about an inch in diameter goes the length of the house, or rather two rods do it between them; on this rod a small toothed wheel is fixed, opposite the centre of each light; fixed to that centre is a flat iron handle, its flat sides standing perpendicular, instead of horizontal; the lower side has notches cut in it to suit the wheel, and is kept in its place by a groove; on applying a hand-crank to the end of the rod, you can open and shut the sashes just as much or as little as you please. This, and many other useful things, were worked out by the village blacksmith, such as a

Mode of suspending Shelves for Strawberries and other things.—Knowing that many of these pots must find accommodation, and thinking there might be something even in this, I kept looking where these should be, or for some of the iron supports that might be left. I need not mention the many unsatisfactory ways this is done—almost all of which make it a point to have the irons in the way all the season, if these are suspended from the rafter. No shelves or irons were to be seen; these were all cleaned and in safe keeping until wanted again. Two modes are practised, and both are worthy of imitation. First, when the shelf is to be suspended from the rafter, a sort of button some three-quarters of an inch in diameter, with a stoutish neck, is fixed to a piece of plate-iron some two and a half inches square, which is screwed securely by a screw in each corner to the rafter, as that is intended for a fixture, and requires sharp looking for to be seen by a stranger. The iron support is made square in the usual way for the shelf to lay on; the sides rise to the necessary height by a circular bend, until they meet in a point, above which is a round hole rather longer than the button, so as to lift off and on easily. The second mode is, when one or

more shelves are to be temporarily placed against the back wall of a house, a staple is securely fixed in the wall, standing out an inch or so with an upturned front, an iron rod with a hooked turned end goes over this staple, and the other end is made horizontal for the shelf to rest upon. In either case, when the shelves are not wanted, the irons are instantly removed. Perhaps I speak feelingly on the subject. These irons, when nailed, or otherwise fastened permanently, are often more than a nuisance, especially in low houses. If I was not once thoroughly stunned, by bringing my head with great force against one, when moving a large plant, it was from having my head handsomely cut, and plenty of the crimson fluid let out.

Fig-house.—This is just such a house as will be used for many things if the Trentham upright houses are not preferred instead. This house is seventy feet long, seven feet wide, nine feet high at back, and three feet high in front. There is only one sash for the width of the roof, and that is let up and down easily, by a weight attached to the end of the pulley, and a peculiar help in the shape of a fulcrum, but the peculiar mode of action of which I do not recollect. The house is heated by a flue close to the front wall. Above this flue there is a wide shelf, now filled with pots crammed with cuttings. In spring, this must be a rare place for Strawberries and French Beans. The Figs are planted against the back-wall, and have but a narrow border to grow in. Fruit have been gathered since March, and there were, on the 20th ultimo, some fine fruit of the *Brown Turkey* and the *Pregussata*, the latter a beautiful blue-coloured Fig, and which forces well. The other sorts were chiefly *Lee's Perpetual* and *Bacifico*, a beautiful small white Fig, that has many *aliases*, but which seems to have been chiefly diffused from the late Lord Melbourne's gardens at Brockett Hall. Mr. Judd had a good deal of trouble before he got the Figs at all to his mind. This is, however, too large a subject to be introduced here, the great points are, good drainage, border about two feet deep of good loam, above open rubble, surface-dressings, and *abundance of water* the whole time the plant is growing and swelling its fruit. Mr. Judd also lays great stress on having a firm concrete bottom beneath the open rubble. It will be seen that the border is very narrow—some four feet. The wood was healthy, luxuriant enough, but firm and short-jointed. There was no difficulty with the early crop, and if not rested, but heat applied, there would be continuous bearing, though I think a Fig in winter a most insipid concern.

(To be continued.)

YOUNG GARDENERS.

(Continued from page 43.)

I HOPE my young friends have carefully read my opening remarks, and are longing to see and con over what I intend to write on this occasion. Every right-feeling gardener that has arrived at my years, feels an interest in, and wishes for, the improvement of his younger brethren. I was very much pleased with what Mr. Shuter has done at Heaton Park, near Manchester, for the improvement of the young men under him. At his solicitation, Lord and Lady Wilton have had a comfortable room fitted up in the gardens as a study, and a fair collection of books placed in it as a gardener's library, to which, I believe, Mr. Shuter has contributed also. No doubt there are many places in the country where such privileges of improvement are put in the way of the young men, to improve themselves, though I have not observed them. I had half a promise from Mr. Shuter to send me the list of books, rules, &c.; and I trust, if this meets his eye, it will remind him of it.

I heartily wish that every place in the kingdom had such advantages and inducements to the young men in the establishment as the one I have referred to. But whether there are, or there are not, a room and a library on the spot, it is no less incumbent upon a young man to strive, under all disadvantages, to improve and increase his knowledge by all the means he can possibly command.

I mentioned in my former communication that a division of time, or, in other words, a method of self-education, at stated periods, should be adopted. This is absolutely necessary, and will, if perseveringly acted upon, bring forth fruit in due season, and that fruit will be a well-improved man.

My first division of time, I propose the young man should devote to reading, and as that is the first, let it be on the first evening of the week, Monday. And here allow me to give you a few hints on the manner of reading so as to be profitable. Merely reading a book without studying it is almost a waste of your precious time. Many young men complain they have a bad memory. It is quite true that all have not that useful gift alike, but the fact is, the memory is blamed when it is the will that is in fault. If your memory is bad, then you must be the more diligent to fix the ideas and instructions of the author you are reading in your mind. Just glance at the great effort of memory public speakers have to practice; men who once had their memory as clear of the ideas they so fluently pour out for the benefit or amusement of their hearers as this sheet of paper was when I commenced to write on it. Read slowly and distinctly, and pronounce in your mind every word, and then, when you have read a fair portion, shut the book and think it over. If you cannot remember the matter sufficiently to give any one a good idea of what you have read, go over it again, and if a second reading is not sufficient, then take notes with your pen, and endeavour to condense the matter in less room, or, as it were, to give a table of the contents of the chapter, or other portion of the book you are reading. By thus practising your memory for a few weeks, you will find it strengthen and improve greatly. A still more ready way of improving reading, will be to practice what is called short-hand, an art that you should study and learn. You will find it useful in numberless instances, both in reading, hearing lectures, or sermons, or speeches, or even taking notes of exhibitions or gardens. I must confess I never learnt it, but I have often deplored the want of a knowledge of that useful art, and I strongly advise every young man to procure a work on the subject, and practice its rules, till he acquires a sufficient knowledge of it to be able to read his own notes.

To return to Reading. Perhaps many young men will say—"Where am I to procure books; and what kind of books, if I could get them, should I procure?" I know that young gardeners are not overburdened with wages, and, therefore, they cannot, individually, purchase many books, especially those on gardening, which are generally expensive, but many may be borrowed. No head-gardener will refuse, if properly asked, to lend his books to those under him, if he sees that they are read, taken care of, and punctually returned. Others will, probably, say, "I have no time to read." Oh! my young friend, I fear this is a false excuse, as I will prove. The hours for work are generally from six o'clock in the morning, to six at night, breakfast and dinner included. Then say, one hour after work-time is spent in the evening meal; in cleaning yourself and your clothes; have you not three hours to bed-time. Even confining yourself to one night to reading, you have one hundred and fifty-six hours in the year to devote to this pleasant and improving art. Never make that excuse, even to yourself, again; for you must see plainly, that if you only read

three hours in a week, you will have spent the same time as if you had commenced some morning at six o'clock and read to six, and continued to do so for thirteen days-and-a-half. All this time you probably would, if not reading, have spent in idleness and folly. Resolve, then, at once to make a beginning, and let nothing that you can possibly avoid hinder you from persevering.

The inquiry may be made, "What am I to read, study, and inwardly digest?" As a matter of course, I recommend you to read *THE COTTAGE GARDENER*, and you may also read the *Gardener's Chronicle*, and some work on Natural History. I would also recommend historical works, especially the history of your own country, and also books of travels. These are eminently useful, especially such where the author speaks of the natural production of the countries he describes. Such a book, for instance, as that written by Mr. Fortune, giving an account of the gardens and plants of China, is both interesting and useful. I was never at a loss how to treat a plant if I knew the climate of the country it came from. Hence the study of Geography is particularly desirable to gardeners; let works of that kind, then, be read. I will only add this, when you have fixed upon and procured a book that you are satisfied will advance your knowledge, read it, and finish it before commencing another.

There are books that you should read on the discipline of the mind, the regulation of the conduct, and improvement of the manners. Such, for instance, as "Foster's Essays." Religious works I leave to your own discretion. To reading these I have left the Sabbath-day for you. I trust every young man, in every garden, either is, or will be, a good Christian. To such, the papers by the authoress of "My Flowers" will be welcome, and read with avidity; and of such men, all will bear this testimony—the better the servant of his Heavenly Master, the better the servant of his earthly one.

In order to fix the knowledge obtained from any book, commence and keep a diary of what you read, something in this manner.—Monday, Nov. 6, began to read Fortune's "Travels in China," read three chapters; describe contents, and so on, till the book is finished, then give your opinion, and summary of the book. This method will fix the contents of the book in your mind, will cause you to exercise your memory, and will also improve your writing, if not already good. This diary should be kept neatly, and quite clean, and will be of great use to you in various ways. I shall have to write on diaries hereafter, and, therefore, I only just hint at this one in connection with reading.

Let me, in concluding this paper, tell you, that though all this may at first appear a formidable business, it will, as you diligently proceed, become easy, and bring you a great reward, and that is the consciousness that you are making good use of that most precious gift—time; a most comforting idea; you will feel an inward satisfaction, that no trouble, or disappointment, or senseless ridicule, can rob you of.

T. APPLEBY.

(To be continued.)

WOODS AND FORESTS.

THE ASH.

(Continued from page 64.)

PRUNING FOR TIMBER TREES.—As the trees advance in growth the pruning must be regularly attended to. This is a most important operation, for upon it being properly performed, and at the right season, depends the production of good sound timber in the least space of time. Where the trees stand wide apart they produce, if not pruned, large branches almost rivalling the main

stem itself in bulk. In such a case, it requires no great amount of sagacity to understand that a great loss to the main stem has occurred. The nutriment to grow and support so many large branches is, in a great measure, wasted in producing branches that should or might have been (if the branches had been cut off whilst young) used to increase the bulk of the stem. Now, though this pruning is undoubtedly beneficial, yet it must not be carried to excess. Close to where I live there is a plantation of Ash, and other kinds of hardwooded trees, that stand very thick; somebody said they wanted pruning, and forthwith it was done; every branch, even to the smallest twig, was cut off close to the stem to within a few feet of the top. The trees then looked like as many fishing-rods ornamented with a bunch of feathers at the small end. This was pruning with a vengeance. Any country-Johnny might have done it. What the consequence will be, any one who thinks at all, and has any knowledge of the functions of leaves, may easily foresee. Depriving a tree of all or nearly its small branches, and, consequently, of its leaves, is a cruel and wasteful deprivation of the organs by which the woody matter of the tree is deposited in the main stem. The pruning away all the branches is almost as great an error as leaving them all on. A clean, straight stem is, undoubtedly, desirable, and especially in the Ash, but then a sufficient number of small branches should be left to produce leaves, and shelter the stem from the heat of summer and the cold of winter, and also for the important purpose of gathering from the atmosphere support and the peculiar gas that nature has provided, by which the solid matter, or woody fibre of the tree is formed. These remarks lead to the conclusion, that in pruning the Ash the strong branches only should be cut off. By strong, I mean such branches as would, if left on, become large limbs; such as will rob the main stem of the support it ought to have. When these small branches become so large as to interfere with the general economy of the tree, then they may be shortened into small branches near the bole; and, finally, as more branches of a similar size are produced, they should be close pruned off. These should never be allowed to become larger than an inch in diameter. The Ash, however, seldom sends forth small spray like the Elm. In the instance of injudicious pruning, above referred to, the Elms have produced, all the way up the naked stem, hundreds of small twigs, hence, the mischief of severe pruning will not be so great as in the case of the Ash.

The best season for pruning this tree is the month of February, and for this reason, the wounds made by the knife or saw are not exposed so long as they would be if pruned in autumn. If cut later, there is danger of their bleeding, and thus wasting the sap which, like the blood of animals, is the life of the tree. If the season is cold and backward, the pruning may be continued to the middle of March; but the moment the sap begins to flow the pruning should cease. After the sap is risen, and the tree is full of leaves, the pruning may be finished. Indeed, summer pruning of many kinds of timber trees may be advantageously done in July; the advantages being, that at that time of the year the woodmen have plenty of time; and, also, the wounds made at that season become partially healed over before winter sets in. There is one remark I must not forget before I quit the subject of pruning, and that is, that all wounds, whether made by the knife or the saw, should be pared perfectly smooth, to throw off the water when it rains; for, if there are any rough places left that will retain it, that part of the wood swells, and, when it dries, cracks, and these cracks hold still more water, until, at last, it penetrates deep into the tree and decays the wood; such trees, when sawn up, have a great deal of waste in them only fit for fuel.

ASH AS COPSE-WOOD.—It is an allowed fact, that where the soil is suitable for the Ash, there is no tree so profitable for copse-wood. By this term is meant, a plantation of Ash to be entirely cut down, when large enough to be useful as hop-poles, handles for mattocks, spades, forks, forge-hammers, and for making crates, and various other purposes. In good land, this size, after the first cutting, is attained in seven or eight years; and I have known such copse-wood sell for fifty pounds an acre. Now, when it is considered that almost no labour or expense is incurred in the management of copse-wood, this return is very great. Copse-wood grows so thick after the third year from cutting down, that it actually kills all weeds, and is an excellent preserve for game. The only care it requires is during the first two or three years after it is planted, and that care consists, chiefly, in keeping the Ash clear of brambles, sloes, briars, and all large choking weeds. To form stools, which are numerous shoots that spring up when the centre or main-stem is cut down, these main-stems should be cut over the fourth or fifth year after planting nearly close to the ground. Each stool will, probably, on an average, send up four or five stems, but if fewer it is of no consequence, because these few will grow stronger, and be fit for things that require thicker stems, such as handles for the mattock and the axe. After this cutting down, the same care of keeping the copse clear of weedy shrubs, and strong-growing weeds, such as the burdock, the thistle, and the greater hemlock, which will be sure to thrive uncommonly in the rich vegetable mould formed by the annual fall of the leaf. If, after the lapse of many years, the copse-wood should begin to show symptoms of weakness, by the stools throwing up weaker shoots, then it will be advisable to change the site. The old stumps may be stubbed up, and the land devoted to agricultural purposes, for which it will be admirably suited. The soil will be deeper and richer than it was previous to the copse being planted; and though it may have tired of growing Ash copse-wood, it will be in fine condition for Turnips, Mangold Wurtzel, Oats, Wheat, Barley, and Clover, the usual rotation of crops for rich land. The change will be beneficial to all; the ground cultivated for many years for these crops becomes exhausted, but is in good condition for the copse; and where the copse has grown for many years, the land will be greatly improved for green crops.

T. APPLEBY.

(To be continued.)

SEA-KALE.

SEA-KALE at Christmas seems almost as necessary a part of the "bill of fare" as the roast beef and plum pudding by which that festive period is ushered in, and, to accomplish that object, as well as to have, probably, the production in question a little earlier than that joyous occasion, requires some forethought and attention, which may be said to have its commencement now.

Some parties, we are aware, have their Sea-kale as early as the beginning of December, and that without any extraordinary effort on their part, the only requisite being to begin early enough; but then, there is a sad sacrifice of quality, for the embryo buds which were set in such a way as would have produced robust heads of Sea-kale, if left alone for some months, and then forced a little to come into use in March, are very often poor insignificant things in December, so much being lost by the effort of awakening the torpid energies of the plant almost before it had fairly gone to rest. Now, as plants, as well as animals, require a period of repose, which period it is advisable, on all possible occasions, to concede to them, it becomes clear that the longer and more natural that period is (consistent with other objects) the

greater the prospect of success; and, in a like ratio, the shorter that period is, in like manner, the danger of a defective produce.

As Sea-kale is as much wanted in midwinter as in spring, means must be taken to accomplish that object, which means it will be proper here to consider; for, like all our fruit-trees, and some few of our stronger-growing vegetables, Sea-kale in a great measure prepares for the crop of the ensuing season by the way in which it perfects itself in the preceding summer, for not only does an early and healthy growth improve its position as an object to force, but it likewise enables the root to enjoy a little repose before the period of enforced activity be urged upon it. This may be done best by having some Sea-kale plants growing on a piece of dry, gravelly soil, for here the plant will most likely ripen its buds, and shed its leaves much earlier than if it grew in the deep loamy soils which it otherwise seems to like very much, and as dry ground is tolerably plentiful in some neighbourhoods, it certainly would be advisable to have a few roots from some one occupying such a place; or it sometimes happens that stiff soil ripens its crops pretty well in a fine, dry autumn, the object being to have the plant properly matured and fairly set to rest as early as possible, and not a little depends on what treatment it has received the early part of the summer.

In going back to this period, it will be borne in mind that Sea-kale, unlike early-forced Vines, or other early-forced fruit-trees, have often to endure the hard-working ordeal of urging on two crops of the produce in one year; for instance, a quantity of Sea-kale is put into action very early in autumn, and is, accordingly, soon done with, in so far as its utility is concerned, for early in January it is often all cut over, and the plants, (if they have been formed in their position in the ground) are simply protected by some litter, dung, or other covering, to save them alive, and the plant is, in a measure, put to rest in a similar way as a horse might be after being overworked, to turn him out on a field covered with snow; for the transition between the hot and cold period is often so little, that it is all but useless, and the head and every morsel of stalk being closely cut off, we need not be surprised if it refuses to start and grow again, in May and June, with sufficient vigour to mature its growth so early in autumn as plants which have not received any such treatment. The wonder may rather be, how does the plant live? However, it is so accommodating and hardy as not to be easily killed, and by judicious treatment may be induced to perform the same office for many years, but, somehow, we have often seen it much maltreated; for, on its ceasing to yield its last handful of crisp, succulent shoots, in midwinter it is too often turned out carefully to endure the after cold, with scarce sufficient covering to keep out frost. After this treatment, it can hardly be expected to start growth again in spring in sufficient time to mature its buds for early winter work another year. A better plan, therefore, is to commence the early forcing with such plants as have been allowed to come on of themselves, for, in the latter case, the intentions of nature had not been much interfered with. I generally begin at the end of a large piece alternately every year, thereby giving each portion its due share of work, only for the earliest of all I frequently take up some roots prepared elsewhere, and force in a mushroom-house or other structure; still the above remarks hold good for what is done out-of-doors, which, after all, is the most important part of the crop.

I am aware that many cultivators have adopted the plan of growing large quantities of Sea-kale plants expressly for the purpose of taking them up and forcing when the period comes round; and no doubt it suits their purpose, because they may not have the necessary means to communicate heat to a considerable surface of

ground; their heating contrivance consists of the more refined materials of iron and water, heated by fuel of some sort, and arranged in the most approved mechanical order. Coupled with this, there may, perhaps, be an objection to see the ground covered a yard deep with leaves, or other heating material, at a place so near the dressed premises, as some who have but limited holdings must necessarily make it to be. With them, a structure capable of forcing this and other things would seem to be of the utmost importance, and if it be well arranged I do not see any fear of its acting badly; but in most rural districts, where tree leaves are to be had in abundance, and their collecting forming, as it does, an important affair in the general appearance of the place, it is quite as well to use them to some purpose or other, and the gentle heat they supply is just the thing for Sea-kale. The operation is well known, but where not, we may say that the old leaves of the plant being cleared away, and a few inches of the top earth (but not so deep as to reach any roots), coal-ashes are brought and laid around each, over which is placed the Sea-kale pot, or box; the former being generally of a jar shape, but that is not necessary. A sufficient quantity for the first crop being so covered up, and the lids to the pots being put on the ground, is covered over with leaves about two-and-a-half feet deep, perhaps more, if they be very light, taking care that the mass extends to the outside of all the pots, as well as regularly between them; the whole being covered over, tops of pots and all, so as to resemble a dunghill set up to measure. A small stick may be thrust in over the top of each pot, or box, as the work proceeds, which will enable the gatherer to find them without trouble when he comes to look them over. A larger stick may also be thrust in the mass to try the heat by, and if the piece covered in forms a part of the whole, care must be taken not to injure the crowns of adjoining plants, which will be, perhaps, under the edge of your covering heap; a stick thrust down at each will point out where they are, but covering with empty pots would be better.

In conclusion, I beg to say, that where it can be done, plants grown from seed one year, and arriving at the size of something like good Carrots, form excellent plants for taking up for forcing, and, for the first crop, are the most suitable, because there is more risk in the first crop on the ground than in the after ones. It would be better, therefore, to sow a little seed every spring, and in taking the seedlings up, be careful to do them as little injury as possible; for though the much mutilated root would probably produce a good head of Sea-kale in March, if the forcing operation were left to that time, it will not do so in December, for in the latter case it has to subsist mostly on the substance stored away in itself, which ought not, therefore, to be diminished, while in the spring season it receives much support from those natural sources to which all vegetation owe their existence

J. ROBSON.

ALLOTMENT FARMING.—NOVEMBER.

WHILE the direful war is pending—"the shaking of the nations,"—how happy and thankful should the industrious British labourer feel, to think that others are fighting his battles, in order that he may "sit under his own Vine and his own Fig-tree." Verily, his condition is indeed altered, as compared with his forefathers: famine, so terrible in former days, now unknown; and instead of the dark and heavy Rye-bread of his ancestors, he enjoys the finest flour of Wheat. Let us hope that these precious realities may lead constantly to grateful feelings to Almighty God, who has thus graciously ordained the progression of the human race. But a thankfulness which has a tendency to end in supineness or listlessness, is neither befitting the aspects of the times, nor that progression which is one of the prime

features of a state of civilisation, and which, indeed, a man's own family has a just right to expect from him.

Let not, then, the declining year discourage the labourer, or induce him to "settle on his lees." Britons have long been noted for pluck on the battle-field; let us hear tell of abundant pluck in other fields—aye, and in gardens too.

Turn we now to the business of the closing year as concerns our allotment friends. It is scarcely necessary to observe, that the cultural business of the year has passed, and that, henceforth, the object must be to secure, in a proper way, the objects of culture, and to seize every opportunity for carrying out whatever improvements can be effected, with a view to progress in the coming year.

I remarked a good deal, in my advice for October, on the principal root crops, such as Mangold, Swedes, Carrots, Parsnips, common Turnips, &c. However, as a good tale, according to a great novelist, is none the worse for being twice told, I will just glance again at them.

SWEDES.—Whatever tops remain uncut should now be worked up; if there is a cow, she will consume the foliage; and if, as is sometimes the case, some have run, or bolted, as it is termed, they will do well to boil with the pig-food. The roots had then better be taken up at once, and, as they are very hardy, they may be thrown in a heap, in a shady situation, and be covered with a little long litter. The ground, wherever they are placed, should be high and dry—a slight incline is best, so that no water can lie beneath them.

MANGOLD WURTZEL must, of course, be got in at the very beginning of the month. This is rather tender; the tops, of course, to be used up by the cow or pig. Mangold is best stored in-doors, and it should be housed in a dry state. If out-of-doors, it must be well protected; the best plan is to slightly thatch it, or, at least, that portion required for late spring use.

PARSNIPS may remain in the ground, unless wanted for immediate use; no protection is required for these. Our practice, however, is to spread the manure required for the succeeding crop over their crowns; this will keep out much frost, and enable the owner to dig them out with ease in the hardest of weather.

CARROTS, of course, will be secured immediately. I have before observed, that they keep exceedingly well if cut into the quick; that is to say, if that portion of the crown be cut away entirely which contains the sprouting parts. Carrots will keep well covered with sand or ashes; the roots piled in a mound, or ridge, on high and dry ground, and then thatched or well covered with litter; or they will keep well in any cool cellar or out-house, if slightly damp; and here it may suffice to throw an old rug or cloth over them, always keeping them dark. If any are diseased, or infested with the grub, they should be first picked out, and placed for present use. Indeed, we may say the same of all roots, for the mortification, or rot, in roots, spreads with facility when the roots are stored away, especially if they ferment in any degree.

POTATOES.—Although much loss has accrued amongst growers in these parts since the disease set in, yet, on the whole, it bears no comparison to former years. They, however, require a good deal of picking over. I have picked some of mine twice, and I think I may report as little loss as any one—perhaps, about five per cent. As for my seed Potatoes, with the exception of the *York Regents*, I am not aware of the least disease; indeed, it hardly could be so, for they were all taken up before any disease appeared, being grown very early, and specially for seed. My *Ash-leaved Kidneys*, *Radicals*, *Flukes*, &c., are nearly as firm as a knot of a tree, and covered with a sound-looking, bronzy-green tint—at once the mark of hardihood, good keeping, strong sprouting, and perfect freedom from disease. There seems something in this colouring that defies the propagation of the disease, for the picker need not trouble his head with these when examining his stock; and those which are disposed to disease never seem to acquire the same tint or colour. Some persons of whom I have heard, who have suffered their Potatoes to remain in the ground after being ripe, to avoid labor in picking, have undergone serious losses. Of course, none of our allotment readers have Potatoes in the ground now; if they have, let them not lose a day in removing them, and spreading them over some

dry floor, where they may be turned in about a week; then, after laying another week, they may be carefully picked and stored away. Those stored weeks' since should also be carefully examined, and every one infected taken out for present use.

CABBAGE WORTS.—Little can be said about this class; they are now in full growth, and will merely require that their older foliage be picked occasionally for the pig. Those who want a good bed of strong Cabbage for June and July next, may still plant on well-manured soil; although the early part of October is the most proper period. If they are pricked out, however, I would advise their remaining until the second week in February.

PROTECTION.—Some loose litter should now be provided by those who have Lettuces, Cauliflowers, &c., to protect; and these things should not be covered until the soil they are in is frozen nearly an inch; they may then be covered, and remain so for many days if frost continue, and when a thaw occurs not thoroughly uncovered,—a light straggling screen being left over them.

ROTATION OF CROPS.—Let the ground be now instantly examined, and the crops of the ensuing year be decided on, in order that all improvements, manuring, digging, trenching, &c., may proceed at proper opportunities, and with strict reference to the crop intended. Let the cultivator employ his manure liberally for the root crops, excepting *Potatoes*, for which I strongly advise the poorest plot manured at planting time with good guano. If I were an Allotment man, or cottage gardener, I would do so if I sold some other article, so assured am I that it is by far the most eligible manure for the Potato under present circumstances—the reasons why, I have before offered in these pages. The next year's plan considered and determined, *drainage*, if any, should be carried out before all other work; and at leisure periods let all ground requiring renewal be deeply trenched and ridged for a winter's fallow. This is of by far more importance than many people imagine, as I have well proved by long practice; but, in addition, science offers reasons which the truly experienced and unprejudiced can scarcely resist. I do not expect that our cottage-garden friends can understand well the value of what the learned call "science," but neither they nor ourselves, in these advancing times, may stand still whilst the rest of the world is advancing with rapid strides; therefore, it is indeed a duty on our part, so to write and advise, as to try, with all our "might and main," to get them to cast a thought, now-and-then, on those considerations by which we have attained strength to assist the weak,—to be in a position to advise the uninformed.

Those who have *boundary-lines* of hedges, or other forms, should now also pay some attention to the scouring of ditches, the dubbing of the hedges, and, indeed, the general clearing up of all materials which can contribute to the manure heap, and give an air of decency, system, and, of course, industry to the occupant. I presume that there is hardly one of our Allotment friends so tame, so unsocial, as not to possess a secret desire to please the proprietor of the soil, and, moreover, a desire to distinguish himself in reality: such there may be, and if so, I pity them. When we look at the enthusiasm and pluck of our brave army, according to late advices, we may very fairly turn to our friends of the workshop, the allotment, or the cottage-garden, and say, Can you look on and hear of such deeds of daring in our army and navy, and not yourselves possess a desire for distinction? But it cannot be so. What is called "pluck," is, I am well assured, not confined to the army and navy of old Britain.

"The sons of the soil,
In their daily toil,"

will show, I am persuaded, that they are of the same blood and spirit as our brave veterans, who, everybody knows, have nobly borne upward the British name. Advance, then, be the word; and this, properly translated, I suppose, means perseverance, and a casting away of prejudices and fears.

Those who can find time will do well to turn and divide their *manure-heaps* when in a dryish state; for it is far better divided in the heap than when wheeled out on the land; and I will engage, that three barrowfuls, well divided, will go as far as four in a rough state, and produce more benefit to the crops.

I hope that our readers will not forget the benefits derivable from *charring* refuse materials, weeds, &c.; and, in order to augment the bulk of this material, they should strain every nerve in collecting it. Any coarse herbage, hedge-clippings, or, indeed, anything once growing, is available; and in burning it up, they should mind and not fire it too much, or both bulk and properties will be lessened. I call my practice a stewing, rather than a charring process, for I cover the burning mass with so much weeds and soil, that when the heap is opened, instead of much wood-ashes, I have a great bulk of a dark material, much like old manure in appearance; and this I find of excellent benefit to crops of all kinds. This material, when the stewing is complete, should be thrown into a compact, conical heap, and well beaten with the spade to keep out rain and snow; and in March it will be found of much service, both as to bulk and quality.

R. ERRINGTON.

APIARIAN'S CALENDAR.—NOVEMBER.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

THE MOORS.—This has been a most favourable season for honey-gathering in the Moors, and I trust that every Bee-keeper within a reasonable distance of them has taken advantage of it. Several accounts have reached me of extraordinary success, some of which, I trust, will appear in the pages of THE COTTAGE GARDENER, and be the means of inducing all Bee-keepers within twenty or thirty miles of them to send their bees another season; for besides the quantity of honey collected (which could not be collected in any other way), its quality is so remarkably fine, for the flavour imparted to it by the heather is most delicious, and totally unlike honey gathered from any other thing late in the season, which is always bad, both in colour and flavour.

WASPS.—Sad havoc has been made amongst the stocks reserved for next year by these marauders, and it is necessary for every person who is anxious for the preservation of his Bees to examine them closely, and to make up the deficiencies caused by these robbers, for their depredations are carried on so stealthily, that nothing short of weighing the hive will discover the extent of them. The sooner this is done the better, for this work of destruction is now fast drawing to a close.

COVERS.—All that is required further during the present month will be to see that the stocks are well secured against wet for the coming winter, and, of all other things, the milk-pan I consider the best; and to see, also, that each stock has at least twenty pounds of honey in store.

PROPAGATING VINES FOR POT-CULTURE.

I OBSERVE in THE COTTAGE GARDENER, October 10, a letter of Mr. Frazer's, stating his method of growing Vines in pots, which Mr. Fish has so kindly published; also Mr. Fish's method.

Mr. Frazer puts his eyes in large pots to break them; Mr. Fish puts his in small pots at once.

Now, I think of the two; Mr. Fish's plan is the best, because, in parting the Vines when they are taken up or thick, they must receive a greater check than when they are put at once in small pots; and, also, I think it less trouble, and when they require potting you have your pot full of roots, so that they receive scarcely any check.

I have grown pot Vines for several years, and I always pot mine in 48-size. I pot at once from that size into the fruiting-pot of eighteen inches. This year I could not make it convenient to pot the eyes before March, but I kept them a-head with good bottom-heat, and by the middle of September I had good, strong, well-ripened Vines (short joints, and good plump eyes). I then turned them out in a south aspect, covering the pots with long litter (as the roots were much through the holes of the pot), to screen the roots from the rays of the sun; also to throw off much rain. I always stop my Vines about a foot or eighteen inches beyond where I mean to fruit them. I consider six feet quite long enough for Vines in 18-inch pots, leaving two or three

laterals to grow to prevent any of the eyes breaking. This stopping of the Vine I hold to be a very important point. The object is not to let the Vine run to a great length, and thus rob the soil; and from its length, the wood would not be sufficiently ripened, and fit for early forcing; but to get the wood well ripened, and the buds perfectly organised during the summer, when the sun is powerful.

I notice Mr. Frazer uses cow-manure with his compost. The compost I use is good spitturf from the hill, with fresh horse-droppings, the fresher the better. I use nearly half-and-half for the last potting, with sand, but very little when I pot the eyes. I consider horse-droppings the best of manures.

I would water entirely with clean water, because I think that Vines should find enough of their constituents in the soil in which they are growing to build their structure. It would, moreover, leave the soil more open for the next season.—T. S.

INFLUENCE OF PARENTS ON CHICKEN.

In further confirmation of the remarks of "W." on this head, I am happy to add my testimony, which I do from experience in two instances; that is, in two broods by the same cock and hen. The cock being a dark Cochin, the hen a variety of the silver Hamburgh. My first brood, last year, consisted of seven chicken, of which six were pullets, strikingly resembling the dark or Partridge Cochin in plumage; the seventh was a cockerel, exactly resembling his maternal ancestors—the Hamburgh family. My other hatching of this year gave me three pullets, identical in colour with the other pullets, and two cockerels identical with the cockerel of the former brood.

The parent's colours were thus, in these two instances, exactly reversed; but unlike "W.'s" pullets, mine partook more of the light and active figure of their Hamburgh mother, but each had the true Cochin tail. I may further add, that as layers, my last year's pullets partook of the Cochin habit, showing, also (unlike their mother), the amiable weakness of the Cochin for sitting.—R. O.

STUPIFYING BEES BY CHLOROFORM.

The *pros* and *cons* touching the intoxication of Bees by means of chloroform has lately been mooted in your columns. Until recently I was an unbeliever in its success; and seeing in your number, that it seldom answers, I desire to make known the experiments which have induced me to change my mind, for the benefit of all whom it may concern.

I had previously used the fungus, and, indeed, was prepared with bellows, &c., to act in a similar manner with the two hives of which I am about to speak.

No. 1.—Two or three teaspoonfuls of chloroform were placed in a cup, and some wool about the size of a pigeon's egg was allowed to suck it up. This was introduced into the entrance-hole of the hive as it stood on its board, and the hole stopped with mud. It was thus left (though unintentionally) for an hour, or even more, and upon my taking up the hive every Bee was motionless, and apparently dead, and, as I then thought, perfectly useless for joining to other stocks. When, however, the honey was being strained on the following day, before the fire, it was found that some of the bees remaining in the cells showed signs of life, and, accordingly, I went in search of those that had been left in the garden uncared for, put them into a common garden glass or cloche, and after remaining before the fire for an hour they revived, and they are at this moment as brisk and active as though it were the middle of summer, and I purpose joining them this evening to one of my other stocks.

No. 2 was treated similarly, except that at the expiration of twenty minutes the hive was lifted up. I removed them then and there to another stock, and the greater part show signs of life, and are finding their way, though somewhat sluggishly, from a *side* to a *centre* compartment in a collateral set of boxes.

I lay great stress upon the application of heat after the

operation. Never, again, will I have recourse to the dirty and unsatisfactory process of fumigation. The honey, I should add, is totally uninjured, and free from smell with the chloroform, which cannot be predicated of the fungus. I enclose my name and address.—B. J. B.

THE GUANO ISLANDS.

We seem to feel incredulous when we hear of islands of manure. The very fact of such enormous accumulations of rich organic ammoniacal, reposing quietly in the bosom of the Pacific ocean, uninjured by storms, unwashed during ages by a shower of rain, is, indeed, a marvel. There are minor accumulations of manure, it is true, found in various quarters of the globe, some gathered together by nature's operations, others, by those of mankind. The rich black earths of Russia, the deep and fertile soils of central America, are instances of the first kind of huge gatherings. The large accumulations of neglected manure around the farm-houses of the Ukraine and of North America are examples of man's neglect of the source of agricultural riches.

If, however, the farmers and gardeners of other lands have been neglectful of manure, such a charge does not apply to the enlightened cultivators of our islands. They are ever ready to purchase even the most expensive fertiliser; and manures are brought to them from almost every sea, and from all quarters of the globe. "During the last two years," remark the editors of Johnson and Shaw's Farmer's Almanac, "there have been imported into England the following amount of the chief foreign articles used as manures (*Parl. papers*, 1853, Nos. 102, 314).—

	1852.	1853.
Ashes	cwts.. 151,944..	155,739
Bones—green and burnt	tons.. 48,835..	37,785
Guano	tons.. 129,889..	123,166
Saltpetre and cubic petre.....	cwts.. 561,137..	641,014

The guano chiefly came to us in 1853 from the following places:— France, Portugal (viz., Azores), Spain, China, Brazil, Republic of Uruguay, Buenos Ayres, Chili, Bolivia, Peru, Patagonia, Falkland Islands."

An intelligent correspondent of the "Canadian Agriculturist" gives the following graphic account of the working and loading of the guano, on the warm and dry little islands of the Pacific, to which we have referred:—

"The island of Ichaboe, on the west coast of Africa, from whence guano was first obtained in large quantities, is perhaps the most remarkable instance of a desolate rock becoming suddenly the port of destination for hundreds of large ships, and the source of immense wealth to numerous individuals. But Ichaboe was soon exhausted, and the dusty treasure that had for many centuries been accumulating on its rocky bosom was literally swept away. The once busy island has now returned to its former loneliness, and the fleet of ships that gathered round it seek, on still more distant coasts, the fertilising powder that shall fatten the impoverished fields of Old World countries.

"More than half the guano imported during the last ten years has been obtained from a small group of islands called the Chinicas, that lie off the port of Pisco, on the Peruvian coast. Of these islands, the largest, Sangallan, has very little guano upon it, the principal deposits being found on three smaller ones, the most northern of the group. These are distinguished as the north, middle, and south islands. The north island has been constantly worked ever since the introduction of guano. The middle one has also been occasionally invaded; but the south island, on which we believe the accumulation to be greatest, remains untouched.

"Every ship bound to the Chinicas is compelled to anchor at Pisco, in order to pass the necessary custom-house formalities before proceeding to her loading-ground. A couple of hours are then sufficient to carry her across the few miles of water that intervene, and she soon drops her anchor amongst the numerous fleet that is ever laying off the island, waiting their turn to load. The odorous scent of the guano is distinctly perceptible at several miles distance, and is far from unpleasant when thus mingled with the pure sea air.

"The first duty of the crew after the ship's arrival is to discharge the extra ballast, and, as the captains have no dread of port-officers or harbour-masters, the sand or stone is quietly tossed over the side, until there is barely sufficient left in the hold to keep the vessel on an even keel. In the meantime the long-boat is hoisted out of her berth amidships, and a part of her crew are busily employed in bringing off boat-loads of guano from the island, to replace the discharged ballast. The peculiar odour pervades the whole ship; the carefully tarred rigging becomes a dirty brown, while the snow-white decks and closely-furled sails assume the same dark hues.

"On the side next the mainland the islands rise precipitately from the sea to a considerable height, presenting only a bare dark wall of rock. From the upper edge of the precipice the huge mound of guano slopes rapidly upward for a short distance, and then spreads into a level surface that gradually descends on every other side to within a few yards of the water. Here and there huge craggy points thrust their white heads through the brown crust of guano, which has completely filled up the deep hollows that have originally existed in the island, and would soon, had it not been disturbed, have covered even the crests of what were once tall pinnacles. The only safe landing-place is on a narrow strip of beach, the remainder of the island being surrounded by low rock and small detached reefs; but the irregular formation has greatly facilitated the loading of ships, enabling the crews to accomplish that in a few days which, under other circumstances, must have cost them studious weeks of labour. Close to the face of the rock the water is deep enough to float the largest merchantman; and the steady constancy of the trade-wind, which rarely increases beyond a pleasant breeze, enables the ship to lie in perfect safety in close contact with her two most dangerous enemies, a rocky island, and a dead lee shore.

"Having taken aboard by her boats sufficient guano to ballast her, the ship is hauled in close to the steep reef, to which she is securely bound with warps and chains, two anchors being dropped to seaward, to enable her to haul off again when loaded.

"Down to the very edge of the precipice, on its summit, comes the point of a triangular enclosure, open at its base, and made of strong stakes driven into the solid guano, and closely knit together with iron chains. At the point resting upon the edge of the cliff there is a small opening, to which there is firmly attached a wide canvass pipe, which hangs down the face of the precipice, and passes into the hold of the vessel beneath. The enclosure, which will contain several hundred tons, is filled with guano by the Indian labourers, and a small line that encloses the mouth of the pipe being slackened, the whole mass is poured into the ship at a rate which very soon completes her cargo. From different parts of the pipe bowlines lead to the mast-heads of the vessel, and from thence on deck, where they are tended by the crew, who alternately haul upon and slack them, so as to keep the long pipe in motion, and prevent its choking. But, however well they may succeed in that effort, the men have considerable difficulty in avoiding some such catastrophe in their own persons; for the guano, after falling from so great an elevation, rises through the hatchways in one immense cloud, and completely envelopes the ship, and renders the inhaling of anything else but dust almost a matter of impossibility. The men wear patent respirators, in the shape of bunches of tarry oakum, tied across their mouth and nostrils; but the guano mocks at such weak defences, and a brisk continued fusillade of sneezes celebrates the opening of the pipe, and accompanies, in repeated volleys and unwilling tears, the unrelenting shower of pungent dust. In the meantime a gang of Indians are at work in the hold, trimming and levelling the guano as it pours from above. How they contrive to exist at all in such an atmosphere is a matter of astonishment; but even they are unable to remain below longer than twenty minutes at any one time. They are then relieved by another party, and return on deck perfectly naked, streaming with perspiration, and with their brown skins thickly coated with guano. The two parties thus alternately relieving each other, a ship of seven or eight hundred tons is loaded in two or three days—the Indians working during the night, and filling up the enclosure, ready for shipment the following day. A smaller enclosure

and pipe supply the boats of the vessel anchored off the island.

"The guano is dug out with pick and shovel to the level of the rock; and on the North island the cutting thus formed is in some places from 60 to 80 feet in depth, in others it is only a few inches; but these shallow parts are comparatively rare, and usually border on some deep valley, firmly packed with the prevailing substance. From the pressure of the superincumbent mass, the lower strata have become almost as hard and compact as the rock itself, and the colour deepens from a light brown, or sometimes white, at the surface, to nearly black at the bottom of the cutting.

"The guano of the China Islands is said to surpass all other deposits in its strength and fertilising qualities, and this is chiefly attributed to the fact that rain never falls on the islands. Owing to this extreme aridity of the climate, the saline particles of the manure are never held in solution, and are therefore less liable to be lost by evaporation than where the surface of the mass is frequently washed by heavy rains. Large lumps of very strong and pure ammonia are, in fact, frequently turned up by the diggers. The thick fogs that at certain seasons are of nightly occurrence on the coast, convert the outer layer into a greasy paste, which is immediately baked by the sun into a hard crust, that prevents even the fogs from penetrating into the interior. This crust is completely undermined by the birds that still frequent the island in vast numbers, though they are said to bear no comparison to the myriads that formerly held sole and undisturbed possession of them. These are misos, gannets, penguins, pelicans, divers, sheer-beaks, and many other sorts of sea-fowl, but the most common is the guano bird, a very handsome creature, beautifully variegated, and decorated with two pendant ear-drops. Naturalists, delighting in hard words, call him, I believe, *Sulista variegata*. These web-footed colonists form regular towns beneath the crust of the guano, and various settlements, communicating with each other by galleries, running in all directions, so that it is deemed almost impossible to set foot upon the untouched surface of the island without sinking to the knee in some feathered lady's nursery, and either smashing her eggs or mutilating her half-fledged progeny. The egg-shells, and the remains of fish brought to feed the young birds, or to be devoured at leisure by the old ones, must form a considerable item in the deposits.

"Thickly tenanted as are the islands and the air above, the waters beneath are no less full of life. Shoals of small fish are continually passing through the channels. Whales are frequently seen rolling their huge bodies in the offing; and the numerous caves that perforate the island on every side are inhabited by colonies of seals and sea-lions, that wage an unceasing predatory war upon the sparkling shoals that pass, unconscious of all danger, off their gloomy self-bound territories.

"The islands themselves are perfectly barren. Not a blade of grass, nor even a particle of moss, exists upon them. They present only one brown arid expanse, incapable of furnishing food for the tiniest nibbler that ever gnawed a grain of corn; and yet they possess sufficient fertilising power to transform a barren desert into a fruitful garden, and they annually furnish food in other lands for thousands of hungry mortals who never even heard of their existence. They are also completely destitute of water—the Indians, who live upon them, being supplied with this necessary of life by the shipping, in turn. Every article of food is brought from Pisco, to which port the guano-diggers occasionally resort to spend in extravagance and dissipation their hard-earned wages. The Commandant resides on the north island, in a miserable cottage; four poles stuck in the guano, with grass mats or a few reeds stretched between them, and covered in with a flat roof of the same material, form specimens of a high order of China architecture. Furniture is, of course, unknown, and clothes are as nearly so as possible; but the high wages given to the labourers appear to balance the *desagremens* of their position, for several Englishmen are amongst their number. Some of these are employed in mooring the ship alongside of the rock.

"Guano has been used for agricultural purposes in Peru ever since the invasion of the Spaniards, and there are good grounds for believing that its use was known to the Indians long anterior to that period. It is now chiefly applied there

in the cultivation of maize and potatoes, and large quantities of it are consumed in the haciendas that skirt the banks of the rivers which flow from the mountains through the desert, raising in their passage through the arid sand-ocean long green islands of extraordinary fertility. The mode of applying the manure differs considerably from that adopted with us. It is never used with the seed; but when the plants are a few inches above the surface, a long shallow trench is made close to the roots, and in this a small quantity of guano is placed, the white being always preferred, the trench being laid completely under water by dams and sluices erected for the purpose, or, where no such system of irrigation exists, other means are adopted for thoroughly saturating the soil. The potatoes produced by this mode of culture are perhaps the finest, both for size and quality, in the world, and the extraordinary rapidity of their growth, after the application of the manure, is most astonishing."

A RAPID MODE OF NETTING.

I AM pleased to hear that my directions for making square-meshed poultry and other netting, at page 84, of the last volume, should have been found useful, and gladly give the additional information requested, as to a more rapid mode of making the mesh than is commonly used. This plan I learned from an Irish fisherman, whose rapidity of performance was remarkable, even when the very much simplified plan of making the mesh which he adopted was taken into consideration; it is, perhaps, rather difficult to describe the proceeding without having recourse to an engraving, but I will endeavour to do so, and I shall be much more easily understood by my readers, if they will take up a piece of netting in progress, and hold the spool and needle in the usual manner; then, to make a new loop, according to this plan, let them bring the loose twine, from the knot last made, backwards (viz., towards themselves), over the spool; then carry it forwards under the spool (but unlike the plan generally followed, the twine is not to be caught on the third or any finger, as it is to surround the spool merely), now pass the needle upwards through the loop that is to be taken up, and pull it close up to the spool, seizing it (and the twine passing through it) between the fore-finger and thumb of the left hand, then throwing the loose twine to the left, bring the needle round to the right, and pass it upwards, between the loop now being taken up, and the one last taken up; then, as a sailor would say, "haul in the slack," and the mesh is completed.

In description, this, perhaps, seems complicated; but in practice it is excessively simple, and can be performed with much greater rapidity than the old style, having less than half the number of movements.

Persons used to the old mode of netting, will, of course, find this awkward at first, and they will be apt to make loose stitches from letting go with the finger and thumb of the left hand before the cord is tightly drawn, but a little practice remedies this inconvenience, and the plan will be found more pleasant, as well as quicker, as there is no sawing of the fingers, or fraying of the twine; and, what is by no means unimportant, stout cord can be used as readily as slender string, and thus sheep netting, or other coarse work, may be readily constructed.

I may mention, that when spools of greater size than an inch across are used, they are much more conveniently held if narrowed at one end from the thumb.—W. B. TEGETMEIER.

THE PRESENT HONEY HARVEST.

THE Bee-keeper's harvest, in all quarters, being gathered in, the enquiry may now be made as to what has been the result of the season in our precarious climate. No doubt the winter and cold, dry spring were trying, and the reports from many quarters announced the loss of hives. The poor Bees! If the commissariat department of the hives is attended to in autumn, and the necessary weight of food insured, there need to be no apprehensions about the severity of the winter.

I found hives in open sheds, and with only ordinary protection, pass the last season in perfect safety. Even the uni-comb hive, about whose fate I had some misgivings, when the thermometer was falling to 10°, did not suffer in the least.

The sad truth, however, is, that from the combined effects of ungenial weather, and inattention to autumn-feeding, the progress in spring was very precarious. A cold, dull June saw the death of many stocks strong in bees, which a little feeding would have maintained in a condition to profit by the gush of honey in July, or to reap a rich harvest on the Moors during August.

Much as has been written about Bees, there are many districts into which the light of practical science has not yet penetrated, and in Bee-management there often seems an obtuseness, probably caused by the fear of difficulties which are imaginary, forming a bar to advancement. Now and then, a more intelligent than his neighbours, a "Wildman," mastering his Bees with consummate skill, may spring up, but after the lapse of a few years, a traditionary remembrance of his powers is all that remains among his people.

Among rugged hills and wild moors, whose stillness is unbroken, save by the bleating of the mountain sheep, or the cry of the startled grouse, the rich carpet of purple heather yields its unrivalled honey; and on the braes, which the readers of Sir W. Scott will remember to have been the scene of the dreaded depredations of "Wat the Devil," may be found remnants of the superstitions of former days. There, when a hive is sold, it is considered prudent for the purchaser to leave a loaf of bread on one of the posts which supported it, as a preventive against his Bees being "witched."

The peasants of those border districts are frequently extensive Bee proprietors, and the lonely shepherd on the moor receives under his charge, during the blooming of the heather, a large collection of Bee-hives from the inhabitants of the vales below.—A.

QUERIES AND ANSWERS.

GARDENING.

HEIGHT OF GREENHOUSE SHELVES.

"I shall be obliged if you will give me your opinion as to a stage for a greenhouse, as I am thinking of altering mine, which, at present, rises with ten-inch steps, which I think of reducing to five inches; but I am told if I do so the plants will not do so well, and be more liable to damp off in winter, from the leaves or branches of the lower tier coming in contact with the pot above, and also, that it will interfere with the circulation of air too much.—D. O. W."

[Most people would be content with the stage as it is, if sound and strong. The propriety of altering it depends entirely on the size of the plants you intend cultivating. If from fifteen inches to two feet in height, let it remain as it is. If for sowing and growing great numbers of small plants, then reduce the height of the steps by all means. For bedding plants, and all others that will not reach a foot in height, the proposed plan will answer admirably. For larger plants, you would be obliged to angle the plants, and skip a shelf or two. On this latter account, as giving most advantages, we would prefer the shelves with less distance between them, as the distance of two can be given when desired.]

DEFORMED MARIE LOUISE PEARS.

"I beg you will excuse my troubling you with the enclosed Pear, which, undoubtedly, is the variety called *Marie Louise*. The tree which produced the above deformed fruit is about ten or twelve years old, and is planted against the gable end of a large house facing the south. The tree has been in bearing for the last five or six years, but from the first year of bearing a few fruit up to the present time, it has always produced fruit like the one sent, with scarcely a perfect specimen, and many of the fruit are a fair size, many being much larger than the one sent; and what makes it the more remarkable, the tree is to all appearance in perfect

health, producing fine glossy foliage with short jointed wood, and trained horizontally. I further beg to state, that the ground round the tree is never dug, but is covered with turf, with some clumps cut out in front of the tree, but not sufficiently near as to injure the tree in any way whatever, as the roots of the tree occupy the ground all round the stem for several feet. I have examined the soil, and find it a dry, sandy loam; therefore, from the above statements, I am entirely at a loss to account for the tree producing such fruit as the one sent. I have grown this variety of Pear on walls with different aspects, and also as dwarf and tall standards, but never saw any fruit like the enclosed from any of them.—GEO. HUNTER."

[The Pear enclosed was contracted on one side, and that side was covered with small bumps. We have seen many similarly deformed, and attribute it to injury inflicted by the early spring frosts. No variety of Pear is a more uncertain bearer, owing to its liability to suffer from the frosts in the prime of the year. This letter was mislaid, or it would have been answered much earlier.]

WALL-FRUIT TREES FOR DURHAM.

"We have the following spaces available for wall fruit trees, and we shall be obliged by your recommending such trees as would be most suitable, taking into account the latitude we are in (Middleton-on-Tees), and being subject to a long continuance of easterly winds in the spring, and that we should prefer to plant such as would be most likely to ripen their fruit. I intend, also, to plant some pyramidal Pears, and some on trellises, and reserve the walls for superior fruit, making the borders in front of the walls ten feet wide (?) and to plant all trees on 'stations.'"

"The aspect of the boundary wall is south; 6° west; height nine feet; divided in the centre by a brick pillar, leaving two spaces of twenty-one feet in length each—call the spaces A and B. Next are three spaces: aspect west; 6° north:—C, height twenty-two feet, and eighteen-and-a-half feet long. D, ten feet high, twenty-three feet long. E, ten feet high, and nine-and-a-half feet long. What would you plant against A, B, C, D, and E? and what against C, D, and E, having the opposite aspect, viz.:—east, 6° south? There are two windows in front of each house; I propose to plant Roses (what kind?), *Clematis azurea grandiflora*, *Wistaria sinensis*, and *Passion-flower* (what kinds?). Will these do to train against iron rods; or what else do you suggest? Do you think there is a fair chance of succeeding with pyramidal Pears, Plums, &c., as recommended by Mr. Rivers, in this latitude? And on what stocks should the wall-trees be grafted.—MIDDLETON."

[Your wall trees may be from ten feet to sixteen feet apart: the higher the wall the closer they may be planted, and *vice versa*. Station distances may be from eight feet to twenty feet, according to the mode of training; but this is advised with especial reference to small gardens. For a South aspect in your case, and on a wall,—Early Duke Cherry; Moorpark Apricot; Royal George Peach; Ehrhge Nectarine; Winter Nellis Pear.

For EAST and WEST aspects,—Plums, Greengage, Huling's Superb, and Orleans. Cherries, Elton or Morello, Late Duke Pears, Jargonelles, Thompson's, Dunmore, Marie Louise, Beurré d'Amalis, Winter Nellis, Beurré Diel.

NORTH-WALL.—Morello Cherries, Magnum Bonum Plum, and stewing Pears.

These are advised with reference to the climate, &c., and a succession. Roses for windows. Aimé Vibert, Pierré de St. Ayr, Géant des Batailles, Gloire de Rosaméne. *Wistaria sinensis*, it is too far north for; *Passiflora cærulea* will suit. Let them be on a wire trellis, two inches from the wall.

As to the Pears of Mr. Rivers' catalogno, he should be best able to answer for them. Only remember, that yours is not a coaxing climate, and much caution is necessary, or you will meet with disappointments. We should, however, recommend Quince-stock Pears in general; but you must protect, for they rush earlier into blossom than those on free stocks, and this is a great fault.]

SELECT POTATOES FOR SEED.

Many correspondents having written to us enquiring where *Fluke* and other varieties may be obtained from the

north-west of England, but especially from Cheshire, we forwarded the inquiries to Mr. Errington, and the following is his reply:—

[I beg to inform the readers of this work, that those on sale at present are of rather suspicious character. In fact, few are selling around this district (Tarporley, in Cheshire) except on the score of disease. In a few weeks' time things will be in a different position; the diseased tubers, where any exist, will have been picked out, and then samples can be pretty well relied on. Our readers, therefore, had better wait a little while, as I think I have a good many to spare myself, of some kinds; all taken up before the disease had commenced; for my crops were very early. My seed, therefore, has never shown the least symptoms of disease, with the exception of the *Regents*. I will, however, inquire, and let our readers know further shortly.—R. ERRINGTON.]

STAPHYLINIDÆ.—RANUNCULUS SOIL.

"A few days ago I was sitting in my garden, when I observed one of those large insects, the *Staphylinidæ*, make its appearance on a flat stone, erect its head, and snuffing, as it were, the breeze with its antennæ, it made a rush towards me, but fell over the ridge of the stone, and, whether from anger or not, it seized a Cherry-stone, which it appeared to me to keep grinding away with its mandibles, until at last I made a movement, and it then rushed under a cinder—I should think twenty or thirty times heavier than itself—which it tossed about as if it was a feather. Think of a man getting under a boulder, and uplifting it in this manner! Now, I wish to be informed, do these insects eat wood? for if they do, they must be really very mischievous in a garden. I saw one, last year, seize a dead worm, and walk off with it. I thought that they were only carnivorous; but it looks as if nothing came amiss to them in the eating line.

"Can you inform me if it is best to tread the ground before *Ranunculuses* are set? I had some *Turban* last year, but could only make two flower out of fifty. This year I have planted at this season, and will let them take their chance through the winter.—JOSEPH LLOYD PHELPS."

[The larger species of *Staphylinidæ* are bold insects, biting anything that opposes them; their food is generally worms and such insects, or dead animal matter, as comes within their reach. The smaller species frequent decaying vegetable matter, feeding upon it, as well as upon the softer species of insects which also occur there. They are powerful in their muscles, but not more so than many other insects; the muscles of insects being, in general, far more powerful than those of men. They do not eat wood; but, if they did, it does not seem very clear, from J. L. P.'s statement, how they would, therefore, be very mischievous in gardens.

The soil, or rather compost, in which the *Ranunculus* is planted should be tolerably firm and good. This plant requires much sand and cow-dung. See THE COTTAGE GARDENERS' DICTIONARY.]

NOSEGAYS—PYRAMIDAL TRAINING.

"Are the early-flowering border-plants, spoken of by Mr. Appleby, September 19, page 477, herbaceous plants, or raised from seed; and where are they to be got? I am delighted with the French nosegay by "T. F. Keir." Ask him to write a little more on the subject. I cannot build it very well holding it in the hand. Is there a foundation, &c.? As for the pyramidal way of growing plants, I can think of nothing else. I know they must be beautiful, and have made a beginning. Please say what plants look best in this form besides Geraniums and Azaleas; and will you favour us with a drawing of a wire pyramid? Should the frame be used to all plants? I have a Scarlet Geranium with the centre stem five feet high, the stem bare of shoots. Can I do anything with this? It is in a very large pot, and bloomed in the greenhouse during the summer.—MARY."

"P.S.—What is the price of "The Cottage Gardeners' Dictionary?" [Eight shillings and sixpence.]

[All the early-flowering border-plants spoken of by Mr. Appleby are herbaceous plants, but seeds of very few of them indeed can be had. Herbaceous plants, properly so called, are seldom increased by seeds, except by nurserymen for their own stock; and there is no demand for such seeds

to make it worth while to advertise them, therefore, we of THE COTTAGE GARDENER are on the same level as our readers with respect to them.

You have just hit the nail where the difficulty of making *nosegays* lies, but it is an extravagant notion to think to learn how to make them until we have the summer flowers over again; ten or twenty shillings worth of flowers is soon swallowed that way in the winter; but we shall not let the fashion fade, depend upon it. We must not say that the pyramidal way of training is "the best." It is only *best* with those who think so. We think it is the best way for many plants. You are of this opinion also, but let us not be too fast; let us rather see if we can manage the *Geraniums* first—too much of a good thing spoils the appetite. We must not have pyramid frames to train to; that is a slovenly way; prune, pinch, stop, tie, train, pot, and shift, upon scientific principles, as we have been teaching these six years, and you can give a plant any shape you please. Your large *Geranium* must be put into a smaller pot early in the spring, else the bottom will never break; but you shall have more directions by-and-by.]

MIMULUS WITH TULIPS AND HYACINTHS.

"Having read in your last number the recommendation of 'Dwarf Mimulus,' to be now planted with Tulips, or Hyacinths, I beg to ask whether the ordinary *Mimulus* is intended, which every one is acquainted with? My reasons for the question are, 1st, that it is considered to want so much water that a Tulip-bed would be too dry for it; 2ndly, that being of a succulent nature, and usually kept in green-houses, it would appear to be unable to stand the winter exposed.—S. C., *Hampstead*."

[It was not the "ordinary *Mimulus*" which we recommended, but a dozen of the new varieties, or two dozen, if required. The following are those we cultivated ourselves, but double that number may be had in the London nurseries. We do not find they want more water than other spring flowers. They are, also, great ornaments for the greenhouse or conservatory in the spring, when well-grown in pots.—*Picta*, *Delicata*, *Scarborough Defiance*, *Excelsa*, *Grange Perfection*, *Venus*, *Queen Victoria*, *Novelty*, *Sambo*, *Orange Boven*, *Conspicua*, *Alma*, *Brother Jonathan*, *Miranda*, *Marginata*.]

HOW TO GROW CLIMBERS IN A STOVE.

"Will Mr. Appleby have the kindness to say which is the best way of fixing up the inside of a span-roofed stove, where it is intended to plant climbers out to cover the roof, and to have plants in pots as well; and what are the best plants for the purpose?—INQUIRER."

[It must be supposed, for you do not say that is so, that your span-roofed stove has rafters, and then your creepers should be trained under them, so as not to shade too much the plants in pot in the house. To accomplish this in the best manner, you should have fixed two wire rods projecting a little on each side of the rafters, about nine inches apart, and nine inches below the rafters. To these wire rods, which should be about the thickness of the pen-holder I have in my hand, the creepers should be trained in an easy, graceful way, so as not to appear stiff, or tight-laced. In addition to these straight wire rods, a pleasing effect would be produced by having, if the walk is in the centre, two other rods running lengthwise in the house, but in a wavy manner, so as to give, when clothed with creepers, a festoon-like effect. If the walk lead round the house with platforms next the upright windows, and a stage or pit, or platform in the centre, then these festoons should be in the highest part of the house, about a foot from the roof, where it is supported by a long-eyed nail and two feet at the lowest part of the bend or wave. These festoons should be in one line only, and when hung with flowers will have the very finest effect. Avoid, however, any approach to crowding. Though nothing is so pleasing as seeing beautiful climbers, such as I mention below, when in flower and closely attended to in training, yet, if they are allowed to grow in a wild manner, interlacing each other, and shading everything below, they are then utterly at variance with good management, and appear very like a head covered with hair to which the comb

or the brush are strangers. This may be set down as a law that must never be infringed: all stove-creepers, from February to October, should have a dressing and training once a month, to keep them separate from each other, and pretty close to their guides, the training rods. Many stove-creepers grow so rampant, that in order to keep them within bounds it is desirable not to plant them in rich soils, or else to cramp them at their roots, by growing them in boxes or large pots. I have just now a *Stephanotis* growing in a pot sixteen inches wide, and fourteen inches deep, in full flower; whereas, a neighbour has one planted out that scarcely ever blooms. These hints will be sufficient to guide you in both training your creepers and managing their roots, so as to give a moderate growth and plenty of bloom. You may plant the following species, all of them, if your house is a large one; or, if small, those only that are marked with an asterisk.

**Allamanda Schottii*
Bignonia venusta
 **Cissus discolor*; beautiful foliage
Clerodendron splendens
 **Combretum purpureum*
 **Dipladenia crassinoda*
 splendens
Ipomea Horsfallii
 * *Learii*

**Jasminum Sambac pleno*
Manettia bicolor
Passiflora alata superba
 Buonapartea
 * *Kermisina*
 quadrangularis
 * *racemosa*
Pharbitis ostrina
 **Stephanotis floribunda*

and two or three climbing Ferns, if the house is large.]

STORING DAHLIA ROOTS.

"You will particularly oblige a subscriber to THE COTTAGE GARDENER of four years, if you will kindly mention, in your next number, how he is to preserve his Dahlia roots through the coming winter, and if it injures them to cover their crowns.—FARNHAM, SURREY."

[As soon as the stems are rendered useless by the frosts, cut them down to within six inches of the ground; then take the whole of the stool up without injuring the tubers. Dry the whole thoroughly by exposure to the sun and wind; then put them into a box, or other receptacle, in their natural position, not crushed together, or one upon another; cover them with dry sand, and store them in a cool, dry place, where the frost cannot touch them.]

POULTRY.

WORMS IN POULTRY.

"I saw in THE COTTAGE GARDENER of September 12, page 466, the case of the diseased Dorking pullets. I have just had a Shanghae pullet that appeared to be in the same way; I confined her and gave her the best of food, and she used to eat heartily; but she became weaker, and at last I killed her, as I did not like to see her in that state. In examining her, I could not find anything to indicate disease; but some time afterwards, in looking at her intestines, I saw a quantity of worms that had crawled out from the part where the gizzard had separated from the intestines. I have no doubt that the worms, from the quantity, were the cause of her wasting so gradually away. Perhaps Mr. Tegetmeier will suggest a remedy for worms in fowls, as I find *Cochins* are very subject to them.—A SUBSCRIBER."

[I have opened many hundred dead fowls, and invariably have examined the intestinal tube from end to end. My own personal experience would not lead me to say that worms are not common in fowls. In cases where I suspected their existence, I should give two or three grains of calomel and five of jalap, and repeat, if necessary, in four or five days; and, at the same time, I should endeavour to get rid of that debility of the system which usually favours and accompanies their presence; this I should do by small doses of iron, and would direct attention to an article in the series on the "Poultry Medicine Chest," which will either appear in this or the following number.

Instead of the above plan, twenty drops of spirits of turpentine might be given mixed up with moist meal; but I should prefer the treatment previously indicated.—W. B. TEGETMEIER.]

VARIATION IN THE COLOUR OF SHANGHAE CHICKEN.

"In the early part of last year, a sitting of eggs were procured from Birmingham, purporting to be from fine Buff Cochins. Two chicks were the produce of the same; both proved cockerels; both were marked exactly alike; but when about full-grown one of them died. The other is now in my possession. I can hardly describe his colour; but it appears a sort of mixture of buff and grey—his breast, thighs, &c., being quite white. His shape and general appearance is that of a thorough-bred Cochin, having well-feathered yellow legs and yellow beak. Now, it so happened, that in the early part of the present season, a very fine white Cochin hen and an equally fine white Dorking cockerel were the sole inmates of a small enclosed yard. But this grey cockerel managed to introduce himself into their company for a day or two, when he was detected and excluded. When the hen became broody, she was allowed to hatch her own eggs, sixteen in number, and she succeeded, not only in hatching, but in rearing, sixteen chicks. With the exception of *two chicks*, they all proved pure white, and they all seemed to inherit, more or less, the characteristics of both parents. None, however, had either the feathered-legs of the Shanghai nor the fifth toe of the Dorking. But to return to the two chicks, both pullets, with which I have principally to do. They were evidently Shanghai, or Cochin, all over, having well-feathered yellow legs, &c., and evidently the offspring of the grey cockerel. In colour, they at first appeared to be quite black, but they ultimately became regularly laced or spangled (I do not know which term to apply);—something like a variety of the Dorking which I have heard called the Cuckoo Fowl, only far more distinctly marked than anything of that sort that I have seen. In fact, as far as colour goes, I think them the most handsome Cochin pullets I have yet seen. I regret that they are not in my possession, as I would enclose you some of their feathers; I, however, enclose you a few from the grey cockerel.

"Now, the questions I would beg respectfully to ask you, or some of your kind correspondents versed in poultry lore, are,—

"1. What strain or cross do you suppose likely to have produced the grey cockerel?

"2. Should I again breed from him and a white Cochin hen, and continue to breed from their progeny, would it be likely to originate a distinct and *permanent* breed or variety?

"3. Is it not singular for the progeny of two birds, one white, the other nearly so, to be so dark?

"4. Has a similar instance come under the observance of you or any of your correspondents?—P.G."

[It would be hazardous to speak positively in reply to your queries, since mere descriptions are seldom of sufficient accuracy for definite conclusions on subjects such as these to which you refer.

1. It is quite possible that the partially-grey cockerel might have been the progeny of pure buff Shanghai parents, white being a colour that not unfrequently manifests itself more or less in that variety.

2. Chicken bred from him and a white Shanghai hen would probably in time exhibit nearly all the colours that the Shanghai race has hitherto assumed. As to any "*permanent and distinct variety being thus originated*," there is an entire absence of analogical evidence that such would be the result.

3. This question is best answered by a reference to the colour of chicken bred between white and buff Shanghaes. In such broods many are black, or approaching that colour, with, usually, a proportion of dark pencilled birds, such as you describe.

4. This inquiry, we presume, refers to the two dark pullets exclusively, and is therefore answered under No. 3.—W.]

CHARACTERISTICS OF GOLDEN-SPANGLED HAMBURGHS AND COLOURED DORKINGS.

"I shall be much obliged if you will inform me what are the points required in good Gold-spangled Hamburgs and coloured Dorkings, as regards colour, comb, &c., both in cocks and hens."

[*Gold-spangled Hamburgs*.—Cocks, a clear, bright, bay ground colour, evenly spangled with lustrous black. In hackle

and saddle, the nearer the approach to a spangle the better. Tail deep black, in form ample; the square hen-tail is sometimes (as we think) unwisely tolerated. The *hen* must be uniformly spangled throughout, the wing-coverts alone excepted, which, as in the cock, should be laced.

In both sexes the comb should be a full rose, placed evenly on the head without lopping on either side, the pike behind being slightly elevated. Ear-lobes clear white, and well developed; legs slate-coloured.

Coloured Dorkings.—Colour is of less importance with these than in the case of any other fowls, and provided the occupants of a pen are well matched in this respect, it would, perhaps, be difficult to find plumage of such an objectionable character as would outweigh other merits. The general rule is to show the grey, and other birds partaking more or less of that colour, with the black-breasted cocks of the same line, reserving the spotted-breasted male birds for the lighter shades of the more silvery hens.

The red male birds are matched with the rich brown hens.

A clean head and neck, with a body both deep and broad, combs uniform in the pen, but either single, rose, or cupped, and white legs, with the fifth toe perfectly developed, are essential elements of success.

Various minor details which would be advantageously studied by an intending exhibitor in either of these classes are beyond our present limit. But specific information on this head is always attainable in the pages of *THE POULTRY BOOK*, and other works on that subject. Attention, moreover, is well bestowed on these points, since, from the increased and still increasing interest that has been gained for the poultry-yard, the pens at our exhibitions are usually of high excellence, and their merits oftentimes so evenly balanced, that a point, in itself of but secondary importance, is frequently found sufficient to turn the scale.—W.]

WHAT CONSTITUTES OWNERSHIP IN A FOWL?

"Last month (September) a friend offered to exchange a cock for two pullets. I accepted his offer, but told him he must keep him until I had sent one of my cocks away, as they might injure their plumage by fighting. Would such bird be disqualified from being exhibited at Birmingham (under the two month's ownership clause), as I have not yet fetched him home? or would he be considered as a bird out at walk?—ALPHA."

[We think you would be entitled to exhibit the cock. So soon as you had sent the pullets, the bird was paid for, and only remained at your friend's as a matter of convenience. If the cock died after you had agreed to the exchange, you would have been bound to send the Pullets, and endure the loss.]

WINTERING HALF-HARDY PLANTS.

"I have three places for keeping my plants in over winter, viz.,—No. 1. A wood frame. No. 2. A cold brick pit. No. 3. Greenhouse heated by gas. I have, in plants, Geraniums, Heaths, Roses, Calceolarias, Cinerarias, Verbenas, Pansies, and Fuchsias, all in pots. Would you kindly inform me, next week, which place would be best adapted for the plants in question? I have a surface of ashes at the bottom of the frame and pit.—AN AMATEUR SUBSCRIBER."

[First of all fill your greenhouse, beginning with the *Geraniums* at the farthest end from the door, the warmest end, and ending next the door with the *Heaths*; what room is left, if any in the middle, between the *Geraniums* and the *Heaths*, fill with *Cinerarias* next the *Geraniums*, and with *Calceolarias* next the *Heaths*. At any rate, whatever room you have, or fill, in house, pit, or frame, avoid the fatal and common error of mixing all manner of plants indiscriminately, as if you were setting off a show house to the best advantage. *Calceolarias* and *Cinerarias* will do well together, as both like moisture. The brick pit is next best for them after the greenhouse, but let the frame be kept well aired *day and night*, if there is no frost. *Roses*, *Verbenas*, and *Pansies*, will do very well indeed in the wooden frame; the lights to be off every fine dry day; keep frost and rain from them, and no more. See that every pot is quite clean, and watered, and every bad leaf picked off *before* you place a plant. Then no watering to signify, or any disturbance among the plants, for the first week; all that time let every door, and window, and frame, be open day and night, unless it rains or freezes.]

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

"An Amateur," "A Country Rector," and "Flora," will meet with early attention.

ERRATA.—Vines in pots. Page 22, line from top 26, for "there is still hope of getting a crop next season," read "there is little hope," &c. The substitution of the word is apt to lead to error. In last line, first column, page 5, for "first question," read "food question." First column, page 41, 20th line from bottom, for "spores," read "spurs."

PAYNE'S HIVES.—These are seven inches deep, and not "cleven," as stated at page 52.

CHURN FOR TWO COWS.—"One of your subscribers wishes to know what churn is most suitable for two cows. I think Burgess' Improved American is the best. I have seen the Sussex glass old barrel, and a many other descriptions of churn used, but always found the American to answer best. The one I use was purchased from Deane, Old Swan Wharf, London Bridge. Can you tell me where I can procure one gander and two geese of the White Embden breed for stock? If you can, I shall feel obliged.—A SUBSCRIBER, Farnham. [Some of our readers answering this query will oblige us.]

VARIOUS (A Learner).—Radishes for earliest spring use must be sown in a gentle hotbed in December, and in the open ground, covered with litter, once a month from December to February. Geranium Cuttings will strike in pots plunged in a bark bed. Bees in the old-fashioned hive are best fed by raising the hive by an eke, that is a circle or two off from the bottom of another hive, and putting the food in a proper feeder into the space thus formed under the combs.

FATTENING PIGS (G. N. H.).—You will find, at page 451 of our 284th Number, a brief summary of our knowledge in this matter.

PLANTING APPLES AND PEARS (A Subscriber).—You say your "soil is high, light, deep, and on a gravelly subsoil," but in what part of England?

BRUSSELS SPROUTS (A Worcester Subscriber).—Cut the sprouts now whilst firm, and about the size of a Walnut. Cut the largest first, and the smaller will continue to increase, and must be cut as fast as they attain the size named. No more sprouts will come from the places where sprouts have been cut. There will be no second crop. Last of all the head may be cut.

FLEMING ON THE PINE APPLE (W. W.).—You had better inquire of the nearest bookseller.

MINESI'S INCUBATOR (J. W. Webster).—We believe this apparatus is very successful in hatching, but the difficulty only begins with the birth of the chicken. Rearing them then commences.

BRAMAN POOTRAS (A Friend).—Mr. Hewitt has never expressed as his opinion that they are a distinct breed. Some societies admit them as a variety, and give them a class to themselves; but we think that nothing more need be said about them.

BEEF ROOT WINE.—W. B. H. will be obliged by a recipe for this.

VARIOUS (Oscar).—We have no idea of what your *Meladone* may be. It is only a local name, and not a dictionary or catalogue name. The right name of *Pyrus japonica* is *Cydonia japonica*. You seem to manage it quite right; it increases best from cuttings of the roots, four or five inches long, and to be put in in February. *Rhododendrons* do not require rotten dung, and are best without it. Good peat and a little sand suit them better, and as they bear the knife as well as the Gooseberry, there is no reason why they should have bare stems. Cut them in when they are getting out of blossom, and that will keep them bushy and in good health.

MUSHROOMS (T.).—These may be grown very well in horse-dung on a bark-bed, which must be about the same depth as for plunging pots in a bark stove. Mushrooms can be grown in the light as well as in the dark.

LIST OF POULTRY SHOWS.—We cannot insert any in our list except those which the Committee think of sufficient public interest to advertise in our columns.

APPLE-TREE BRANCHES DYING (W. Ledger).—What is your soil and subsoil? Are they well drained?

WORK ON GARDENING (G. Binks).—Buy THE COTTAGE GARDENERS' DICTIONARY. Its price is 8s. 6d.

"MADRAS BEANS."—A Subscriber wishes to know where he can obtain the Beans known by that name at Poonah and Bombay.

NAMES OF PLANTS (Philo).—One of the Golden Rods, *Solidago procera*. (C. Copley).—1. *Lobelia fulgens*. 2. *Lobelia speciosa*. 3. *Cistus crispus*, or Curled-leaved Rock Rose. (Brentingby Cottage).—1. *Ammonium alatum*. 2. *Erigeron speciosus*. (Oscar).—3. Is the *Scabiosa atropurpurea*, a biennial plant, and one of the most useful of plants for ornamenting our flower-borders from June to November. This species yields an endless variety of colours, although specifically called as above; and when sown about the first of August, in some bye-place for transplanting into the flower-borders in the spring, where they will flower the same year. 4. *Centaurea cyanus*; this is an annual of great beauty, which should be sown about the first of April in the open ground; also may be sown in August for early blooming. It is a native of our own fields, as well as all Europe, and very various in colours, and very ornamental in our flower-borders. (Carrig Cathol).—1. *Tacsonia ignea*. 2. *Statice latifolia*, or Broad-leaved Sea Lavender. 3. *Myrica gale*, Sweet Gale or Candleberry Myrtle. 4. *Lobelia secunda* (?). (R. D. Wimbleton).—1. *Veronica spicata alba* (?) 2. *Begonia parvifolia*. 3. *Melastoma*; species doubtful. 4. *Lycopodium helveticum*. 5. *Centradenia rosea*. (Oscar).—*Salvia Grahamii*; a common greenhouse plant, which makes a good bedder. (Retset).—*Aloes* are too numerous to be recognised by a slight description. 4. *Oxalis floribunda*. 5. *Begonia discolor*. 6. *B. nitida*. 7. *Ipomœa quamoclit*.

NAMES OF FRUIT (A Young Amateur).—PEARS—1. Louise Bonne of Jersey. 2. Marie Louise. 3. Easter Beurré. 4. Nelis d' Hiver. 5. Buchanan's Spring Beurré. 6. Gansell's, Bergamot. APPLES—1. Blenheim Pippin. 2. Unknown.

CALENDAR FOR NOVEMBER.

FLOWER-GARDEN.

ANEMONES, plant for succession bloom. AURICULAS and POLYANTHUSES, put under shelter (See October). BULBOUS ROOTS, finish planting in dry weather; pot for latest forcing, and for plunging in flower-beds, &c. CARNATION layers, finish planting and potting; secure the pot at once from rain. CLIMBERS of all sorts, plant, prune, and train. COMPOST, prepare and turn in dry weather. CROCUS, pot large lumps from the borders for forcing. CHRYSANTHEMUMS, against walls or fences, secure from frost. HALF-HARDY bulbs in borders, secure from frost and rain by a boarded covering. DAHLIAS, cut down after frost, and let roots remain as long as it is safe; when taken up, dry them in open sheds, &c., before storing, where frost and damp cannot reach them. DRESS the beds and borders, and put mark-sticks to bulbs and other roots, to guide you when digging. EDGINGS, plant. EVERGREENS, finish planting, b. FIBROUS-ROOTED PLANTS, finish dividing and planting, b. FORT over borders, &c. GLADIOLUS: all the old sorts may yet be planted; most of the new do better planted in spring. GRASS, cut very close the last time; kept clear of leaves; and roll. GRAVEL, weed and roll. HEDGES, plant, clip, and clear at bottom. HOE and rake shrubberies, and bury the leaves, &c. between the plants. HOLLYHOCKS, finish planting. LAYERING, perform at intervals, if fine weather, till March. LEAVES, gather for compost, &c. MARVEL OF PERU, take up and store like Dahlias. MULCH round trees and shrubs lately planted. PLANT perennials and biennials (See October). PLANTING, deciduous shrubs and trees, perform generally, and finish as early as practicable. POTTED PLANTS, for forcing, plunge in the earth of a well-sheltered border facing the sun. PRUNE shrubs and trees generally. RANUNCULUSES, plant for earliest bloom. Seedlings of them, in boxes, &c., remove to a warm situation. WEAK ROSES, prune without delay; very strong ones, delay pruning till March; tender ones, secure from frost with moss, fern, &c. SHRUBS of all kinds, plant, stake, and mulch. SUCKERS, from Roses and other shrubs, separate and plant. TIGRINIANS, save from frost as long as possible; should not be dried till January or February. TULIPS, finish planting, b. D. BEATON.

GREENHOUSE.

AIR, admit rather freely, in dry weather. AZALEAS, for blooming early, keep in the warmest end of the house, and they will not lose many of their leaves; if the buds are well set and prominent, a few may receive the heat of a plant stove, to bring them in by Christmas; those once forced will come earlier of their own accord again. Those for flowering in spring and early summer keep as cool as possible, so that the temperature is above 35°. BULBS, such as Hyacinths, Tulips, Narcissus, &c., pot for spring flowering, and so manage them that roots shall precede flower-stems. CALCEOLARIAS, keep growing slowly, in an airy, moist atmosphere; seedlings, pot off, and prick into pans; cuttings of shrubby ones may now be potted, and cuttings may even be put in in the beginning of

the month, in a cool, moist place. **CAMELLIAS**, finish setting in; and the late ones may have their buds thinned, if necessary; the earliest will now be swelling, and a little cow-dung water, cleared, and not too strong, will do them good; these should be placed with the forward **Azaleas**. **CINERARIAS**, encourage the forwardest to grow in a moist, gentle heat; keep those for spring and summer just moving. **CLIMBERS**, however beautiful, cut back to give light to the other plants. **CHRYSANTHEMUMS**, remove incipient roots from the axils of the leaves on the main shoots; thin the buds where too thick; encourage with manure water; and if not all in-doors, have protection ready. **DAMP STAGNANT AIR**, avoid. **FIRES**, light in frosty and foggy weather, that air may be given; but give artificial heat during the day, rather than at night, unless the frost is very severe. Choose a sunny day, if possible, to light your first fire, as your flue, &c., will be more easily dried; it is no joke to be fixed in a stock-hole behind a fire that will not burn. **FURNACES** and **FLUES**, clean out previously. **HEATHS** and **EPACRIS**, keep in the airiest part, especially the former. **GENISTAS**, **CYTISUSES**, **CORONILLAS**, &c., syringe in a sunny day, and aid with manure water, to cause the bloom to open strongly. **GERANIUMS** or **PELARGONIUMS**, encourage the old plants with a good position; train into the desired shape. Nip any luxuriant shoot, so as to equalise the strength; keep fresh potted ones just moving. **GOMPHOLOMUMS**, **Platylobiums**, **Chorozemus**, &c., place in double pots, that they may be more uniform in moisture, as extreme dryness and extreme wet will alike be their ruin. **PLANTS**, keep clear from dirt and insects, by washing and fumigation. **TEMPERATURE**, keep from 40° to 45° at night. **WATER** only when necessary in dull weather: little will be wanted, unless for plants swelling their flower-buds; for these use water warmer than the air of the house. A slight dusting with the syringe over the foliage will be serviceable in a sunny morning. **CLEAN** pots, paths, stages; tie, train, and fresh label in bad weather.

R. FISH.

FRUIT-FORCING.

CHERRIES IN TUBS, &c., protect roots. **CAPRICUMS**, dry off at root to ripen them. **CUCUMBERS**, afford necessary heat, not below 70°, with air-moisture and all possible light. Early forcing prepare for. **FIGS** for forcing, get to rest; protect pots or boxes, as also branches. **FLUES**, clean all and repair. **INSECTS**, continue the warfare against, also preventive measures. **MUSHROOM-BEDS**, provide succession; spawn when down to 75°; sprinkle beds where the Mushrooms are coming through; keep a moist air. **MELONS**, sustain 75° bottom-heat, 70° top-heat, with abundance of air; fumigate if infected. **NECTARINES** and **PEACHES**, prepare for early forcing, by using the wash so often named in this work, pruning them previously. **PINES**, in dung-pits, improve declining heats; 60° to 70°, with liberal ventilation. **PINES**, late fruiters, 5° more; air in moderation. **REPAIRS**, carry out directly in all houses. **REST** fruits for forcing, plunge and protect wood. **STRAWBERRIES**, in pots, plunge and protect. **VENTILATION**, attend well to during dull periods. **VINES**, for early forcing, as *Peaches*; if roots outside, protect border directly. **Vines**, in fruit, fire occasionally; ventilate freely; keep very dry, and use scissors weekly.

R. ERRINGTON.

ORCHARD.

BORDERS, autumn-dress. **BUNDS**, cut bandages off. **CHESNUTS**, gather. **DRESS** TO KILL INSECTS as soon as pruned. **FRUIT**, gather all remaining. **FRUIT-TREES** of all kinds plant. **FRUIT-ROOMS**, ventilate freely. **FRUIT-STORES**, pick over. **INSECTS**, wage war against, at every opportunity. **MENLAES**, preserve. **MULCH**, apply to newly-planted trees. **NUTS**, remove suckers from. **NAILING**, proceed with, in order to expedite spring business. **PRUNING**, perform in the following order: 1st. Bush-fruit, then *Cherries*, *Apples*, *Plums*, *Peaches*, *Vines*, &c., and ordinary *Pears*, reserving choice ones, *Apricots*, *Figs*, &c., until spring. **PROTECTION** for blossom, lay by from shrubby or wood prunings. **PLANTING**, proceed with, all but *Figs* and *Vines*. **RASPBERRIES**, plant suckers from, and prune. **ROOT-PRUNING**, perform immediately. **STAKING**, see to. **STRAWBERRIES**, remove rubbish between rows, and manure, but cut not the foliage. **STATIONS**, prepare. **TRAINING**, carry out betimes. **TOMATOES**, ripen before the fire. **TOP-DRESSINGS**, apply. **WALKS**, turn or clean for the winter. **WEATHER**: provide in-door's work for a bad season, such as labels, stakes, training-pegs, &c., and grind your bill-hooks, and file your hand-saws.

R. ERRINGTON.

ORCHID HOUSE.

AIR will seldom be required during this month; keep the air inside much cooler, because most of the plants ought now to be in a state of rest. **BASKETS**, plants in, should only be syringed; they ought to be so placed that the drip from them may fall into the walk. **DIVISION**: such plants as *Stanhopes*, *Gongoras*, and *Acropelia*, may be divided this month, with a view to increase them; give these no water till they start into growth again. **HEAT**: the thermometer in the warmer house should be allowed to fall to 55° in the night, and never exceed 70° by day; 65° without sun will be sufficient. **POTTING** will be required occasionally; even at this untoward season of the year some plants will grow, and, therefore, must be potted, because if delayed, the young roots will begin to push, and then it is difficult to pot without breaking them. **REST**: keep all the plants possible at rest for the next two months; the means are a cooler and drier atmosphere, and no more water at the root than is absolutely necessary to prevent the pseudo-bulbs perishing. **SYRINGING** will be necessary to plants on blocks, two or three times during the month. **WATER**, apply sparingly, except to plants growing; to these a larger quantity may be given.

T. APFLEBY.

PLANT STOVE.

AIR will still be necessary to this department; give it early in the forenoon, and close the opening by two o'clock. To sweeten the air, light the fires early in the morning, and give air accordingly; this will allow a large body of fresh air to enter the house, which will displace as much foul air. **CUTTINGS** of stove plants should all be potted off early this month if rooted. **BULBS** should now generally be at rest; keep them dry and moderately cool, to prevent a too early excitement. **FORCING-FLOWERS** for this department should be commenced slowly, early in the month, such as *Azaleas*, *Lilacs*, *Laburnums*, *Rhododendrons*, *Roses*, &c. These will flower in December or January. **WINTER-FLOWERING PLANTS** will now be showing their flowers. They should have a moderate supply of water, and occasionally a watering with weak liquid-manure. Keep every part of the stove perfectly sweet and clean; remove all decaying leaves as they occur; stir up the surface of the soil in the pots, to prevent moss and weeds from appearing. In this month, a supply of the different soils, manures, and vegetable mould, should be procured.

T. APFLEBY.

FLORISTS' FLOWERS.

ANEMONES may yet be planted, excepting the finest double ones. **AURICULAS** and **POLYANTHUSES**; no delay must take place in putting these into winter quarters, if not already done. Scatter occasionally amongst the pots a layer of very dry ashes, which will absorb the moisture. **CARNATIONS** and **PICOTEES**, finish taking off the layers, and potting them; place them in cold frames, giving plenty of air every day. **DAILIAS**, cut down when frost-bitten, and cover the roots with a small hillock of coal-ashes, or take them up at once, and reverse the roots, to allow the moisture to run out of the hollow stem. Number every root, and put them by in a dry, cool place, where no frost can reach them. **FUCHSIAS**, done blooming, prune in, and give no water to, for a month. **HYACINTHS**, finish planting, both in pots and beds. **IRISES**, both *Spanish* and *English*, plant in a rich soil and open situation. **NARCISSUS**, pot and plant out in the beds. **PINKS**, plant out early; fasten firmly, to prevent the frosts from drawing them out. **RANUNCULUS-BEDS**, prepare. *Turban variety* plant in beds and pots, the fine-named varieties do not plant till spring. **TULIPS**, plant on or about the 10th of the month; choose a dry day for doing this. **VERBENAS**, take up and pot, dressing-off the straggling branches; their cuttings shelter from early frost. All **FLORISTS' FLOWERS** IN FRAMES AND PITS keep moderately dry, clear of weeds, and decaying leaves. Search for **SLUGS** and other vermin daily.

T. APFLEBY.

KITCHEN-GARDEN.

ARTICHOKES, winter-dress. **ASPARAGUS-BEDS**, dress; attend to that in forcing, and plant in succession. **BEANS**, plant a good main crop toward the end of the month. **BEET** (Red), dig up for storing. **BROCCOLI**, lay down or remove to other warmer situations with good balls of earth; take care not to injure their leaves. **CABBAGES**, plant or prick out into nursery-beds. **CARDOONS**, earth up, b. **CARROTS**, dig up and store, b.; leave or plant out for seed. **CAULIFLOWERS**, prick out in frames, &c., for winter protection; pay particular attention to airing in all fine weather, both hand-glass crops and otherwise. **CELERY**, earth-up in dry afternoons, having the earth all forked up previously. **COLEWORTS**, plant. **COMPOSTS**, prepare, and always have a supply in the dry for immediate use. **CUCUMBERS**, attend to in forcing. **DRAINING**, attend to where required. **DUNG**, prepare for hotbeds. **EARTHING-UP**, attend to. **ENDIVE**, tie up for blanching or otherwise; pay particular attention to protection. **GARLIC**, plant. **HERBARY**, clean, &c. **HORING**, attend to; on a fine afternoon never lose a favourable opportunity for this or any other kind of work. **HORSE RADISH**, dig up, and lay in the prime for use, and replant. **HOTBEDS**, make for salading, &c. **JERUSALEM ARTICHOKEs**, dig up and store. **LEAVES**, continually collect into some corner for future use. **LETTUCES**, plant in frames; attend to those advancing. **MINT**, plant; force in hotbed. **MUSHROOM-BEDS**, make; attend to those in production. **ONIONS**, in store, look over; (Potato), plant. **PARSLEY**, plant some in a frame for use in snowy weather. **PARSNIPS**, dig up and store, b.; leave or plant out for seed. **PEAS**, of the best early kinds, may be sown toward the middle or end of the month. **POTATOES**, attend to those in store, or dig up, should any remain out. **RHUBARB**, clear away decayed leaves, and top-dress; also pot off any number of plants that may be required for early forcing, to bring into the forcing structure as wanted. **RADISHES**, sow, in hotbed. **SALSAFY**, dig up and store. **SCORZONERA**, dig up and store. **SEA-KALE**, pay particular attention to the removing of all the decayed leaves, &c.; top-dressing, covered up with fermenting materials, or other modes of forcing. **SEEDS**, dress and store. **SHALLOTS**, plant, b. **SMALL SALAD-ING**, sow; sow in hotbed. **SPINACH**, thin, earth-stir, and keep clear of decayed and fallen leaves. **THINNING**, attend to. **TRENCH**, ridge, &c., vacant ground. **TURNIPS**, attend to thinning-out, or hoeing the late sown crops, and should the weather be inclined to set in very severe, any number of turnips that are full grown may be taken up, and stored for winter use. Spading-in is often better than the hoe. Always COVER up a little earlier on the appearance of frosty nights. Also look over your **BROCCOLI** quarters of a frosty-looking evening. See if any are fit to cut, or if their leaves need to be broken down over the heads as a protection.

T. WEAVER.

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WEEKLY CALENDAR.

D M	D W	NOVEMBER 7—13, 1864.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
7	TU	Lombardy Poplar leafless.	30.250—30.166	58—46	N.	—	6 a 7	22 a 4	5 39	17	16 11	311
8	W		30.322—30.252	55—25	W.	—	8	20	6 19	18	16 7	312
9	TH	PRINCE OF WALES BORN. 1841.	30.517—30.459	51—24	N.W.	—	10	18	7 9	19	16 2	313
10	F	[Lord Mayor's Day.	30.429—30.246	51—27	N.W.	—	11	17	8 8	20	15 56	314
11	S	Bunting mute.	30.262—30.207	53—28	N.E.	—	13	15	9 16	21	15 50	315
12	SUN	22 SUNDAY AFTER TRINITY.	30.308—30.043	50—38	N.E.	03	15	14	10 27	22	15 43	316
13	M		29.912—29.760	46—31	N.E.	—	17	12	11 40	23	15 34	317

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 51.4°, and 36.9°, respectively. The greatest heat, 63°, occurred on the 12th, in 1841; and the lowest cold, 21°, on the 12th, in 1843. During the period 102 days were fine, and on 97 rain fell.

MANY doubts have we heard expressed whether the BEANS mentioned twice in the Old Testament (2 Samuel xvii. 28; and Ezekiel iv. 9), belonged to the Kidney Bean or to the Common Bean genus of modern gardeners. We have no doubt upon the point ourselves, because, in the book of the Prophet last named, he is directed to take "Wheat, and Barley, and Beans, and Lentils, and Millet, and Fitches, and put them in one vessel, and make bread thereof." Now, the flour of all the seeds mentioned, if, by "Beans," our common Bean (*Faba vulgaris*) is intended, was very usually employed for making coarse bread for the poorer classes; but the flour of the Kidney Bean was never so employed.

The Hebrew word translated as above is *Pul*, and from this word is derived our more comprehensively employed word, *Pulse*, for "Pulse" includes every papilionaceous plant bearing its seeds in a pod. So in Hindoostanee, *Phulee* is the name of any pod of the same kinds of plants. Our word *Bean* is probably derived from the Arabic *Ban*, which is the Arabian name of the Coffee Bean or Berry.

Dr. Kitto says that the kinds most common in Syria are the *White Horse Bean* and the *Kidney Bean*. The paintings of Egypt show that the Bean was cultivated in that country in very early times. It is stated by Herodotus that Beans were held in abhorrence by the Egyptian priesthood, and that they were never eaten by the people. This, however, is too exclusive a declaration; and as it is certain that they were extensively cultivated, the statement made by Diodorus is the truth probably, namely, that the abstinence from Beans by the Egyptians was not general. It may be true that Beans did not in the prophetic times form so considerable a portion of the diet of the poorer Egyptians as they do at present; and this renders the inspired symbolical writing the more emphatic, for, by telling the Prophet to make his bread of Beans and other inferior seeds mixed with Wheat, it warned the more plainly of the privations to which the besieged Israelites would be subjected.

At present, Beans cooked in various modes are a very common food in the East; and Dr. Shaw, when travelling in Barbary, found "Beans, after they are boiled and stewed with oil and garlic, are the principal food of persons of all distinctions."

Among Pulse, Pliny tells us that the Romans gave the first place to the Bean, "because thereof men have assayed to make bread." "Many are the uses of the

Bean," he adds, "not only as a food for four-footed animals, but also especially for men. Among many nations it is mingled with corn, and makes the bread exceedingly solid." Not only did one of the chief families of Rome, the *Fabii*, derive its name from their ancestor being celebrated for the culture of the Bean (*Faba*), but it was an especial portion of the religious offerings to the deified Carnea. Hence the festival of this goddess was called *Fabaria*.

Pythagoras condemned the eating of Beans, not only as indigestible, but, as Pliny says, "because the souls of the dead reside in them." This seems to have been a mistake of Pliny's; and Rhodius, Gellius, and others, most probably give the reason of Pythagoras more correctly when they state, that he considered that it was the material from which all animals are created. It is one among many curious coincidences between modern science and the opinions of the old philosophers, that chemical analysis shews, that in Beans there are more animo-vegetable components—that is, of matters containing much nitrogen—than there are in almost any other seeds. Einhof found 417 parts of vegeto-animal matter in 3,840 of Beans, or nearly one-eighth.

Holland thus translates what else Pliny has said of the Bean, in his "Natural History:"—"Varro also affirmeth that the great priest, or sacrificer, called the Flamen, abstains from Beans, both in those respects aforesaid, as also that there be seen in the flour thereof certain letters or characters that shew heaviness and signs of death. Further, there was observed in old time a religious ceremony in Beans; for when they had sown their grounds, their manner was, of all other corn to bring back with them out of the fields some Beans, for good-luck sake, presaging thereby, that their corn would return home again to them. Likewise in sales by auction it was thought that if Beans were intermingled with the goods offered to be sold they would be lucky and gainful to the seller."

It may have been founded upon this opinion of the good-luck conferred by Beans that they came to be employed by the Greeks in balloting. They were of two sorts, white and black; the white were whole, and were the symbol of acquittal, but the black Beans were pierced with a hole, and conveyed a vote for condemnation. Hence Aristophanes calls those judges who lived upon gifts received by them for doing justice, "Bean-eaters" (*Kvaποττ ωγες*).

The superstitious opinions of the Greeks and others

of the heathen have been retained in some measure by the Roman Catholics; and if reference is made to the "Adages" of Erasmus, much will be found there on "the religious use of Beans." The "Carlings" or fried Peas eaten in some places on Mid-Lent Sunday, have their origin from the same classic source; and so general was this food looked upon as a religious rite, that Skelton, apostrophizing a profane person, tells him that people speak of him as one

"Who in holy season
Will neither have *Beanes* ne *Peason*."

Another writer of the Middle Ages says:—"After the sallad (eaten in Lent at the first service) we eat fried *Beanes*, by which we understand Confession. When we would have *Beanes* well sodden we lay them in steepo, for otherwise they will never seeth kindly. Therefore, if we propose to amend our faults, it is not sufficient barely to confess them at all adventure, but we must let our confession lie in steepo in the water of meditation."

These symbolical employments of Beans, both by the heathen, and by some Christians, are all traceable, we think, to their similar use in the prophetic time.

PRUNING BLACK, RED, AND WHITE CURRANTS.

IN order to pursue the subject of pruning in an instructive way, we may as well take our fruits in that order which may be considered as best befitting the circumstances of the period, and the natural habits of the trees themselves.

THE BLACK CURRANT.—Next to the Gooseberry, this may be considered the most important of bush fruits. In this part of the country, the cottagers make much profit of them, the climate being peculiarly suitable. Black Currants, Damsons, and Apples, are here (Cheshire) the chief objects of the cottage gardener's care, and by means of each or all of these he not unfrequently pays his rent.

When we take into consideration that Cheshire is noted for cheese, and for the above-named fruits, we may very naturally reflect if there be any identity in the natural habits of these things; whether as to the atmosphere or the soil. Such a thought has often struck me, and its full consideration, I think, leads us to a great fact. Whatever part the soil may play in these results, whether it possess any special character or no, there can be no question that the atmosphere plays, at least, one equally important part. I certainly never lived in our eastern counties, but from what I have gleaned concerning them, I infer that the average amount of air-moisture in Cheshire and Lancashire, as compared with most of those counties on the borders of the German Ocean, must be much greater. And what about air-moisture?—admitting that you are tolerably correct—our sermtineers naturally ask; and I am obliged to them for putting the question. It is, I think, doubtless, owing, in the main, to this, that Cheshire owes most of its fame for cheese; by means of a liberal amount of it their pastures grow in a more continuous way. Damsons, which are so liable to the depredations of the red spider, are here better enabled to withstand its attacks, and as for our present subject, the Black Currant, why everybody knows that it loves both air-moisture and root-moisture.

The Apple, too, under the influences of a dry atmosphere, long continued, is very apt to be infested

with a host of insect enemies, and the fruit, in consequence, is lean, and comparatively worthless. Such considerations as these serve to show the reason why certain fruits thrive better in our county, or division of the kingdom, than another. Damsons, for instance, are seldom seen in perfection near the great Metropolis, and, indeed, in few of our southern or south-eastern counties.

The pruning of the Black Currant is, perhaps, more simple than most of our bush fruit, being, in the main, confined to thinning-out. These bushes, however, vary much in character, according to their age, the previous mode of pruning, and to the soil. Old trees are apt to be of considerable height, and in the attempts made occasionally to keep them within bounds in this respect, it may turn out that much shortening-back has to be resorted to, and this has, of course, a tendency to cause the main twigs to branch exceedingly, and by much shading to render the bearing qualities of young shoots, lower down, to greatly diminish. In this case,—I would point to an error in practice—the finest fruit is produced upon clean, young shoots, which should neither be excessively long nor stumpy; very long growths generally have great lengths between the buds, and, to say nothing of the character of the fruit, this has a tendency to cause the bush to attain an inconvenient height speedily. Very stumpy wood, the lateral produce of strong branches, pruned back as before observed, is injurious to the successional shoots, which are always springing from below to renew the bush, and these are chiefly the result of cutting back main branches into older wood; a thing to be avoided.

Let the pruner, therefore, prefer wood of a medium character, certainly rather strong than otherwise, and when branches become so coarse and tall as to peril the welfare of the other portions of the bush, rather let them be totally removed than stumped back; thus avoiding the production of those thick bunches of laterals complained of. I have no doubt, however, of this rejected wood producing fine fruit; but then, if such is to be encouraged, why the other class of shoots must undergo considerable sacrifice, and the result will speedily be tall, gawky, and unwieldy bushes, shading much ground.

The pruner, therefore, must first go round his bush and see what is its general character; whether it has been well-used or ill-used; whether it merely needs ordinary handling, or whether a sacrifice has to be made in consequence of previous bad management; such sacrifice generally consisting in cutting away, occasionally, whole branches, if needs be.

When bushes have been properly managed, the labours of the pruner are both light and simple. He has, of course, to thin out the young spray where too thick; and now the misinformed will naturally desire to know at what average distance the young shoots of healthy bushes may be placed; for, indeed, this constitutes one of the chief points in the affair. I should say, then, that the young shoots should not be nearer than three inches; this is, indeed, rather close practice. In this, as in most other fruits, the size and closeness of the foliage is a prime consideration, and, of course, has close reference to the degree of light admitted to the various portions of the tree or bush, and its equalisation.

And now about shortening. There are those who are averse to all shortening in the Black Currant; but I cannot confess to being one of them, although I would avoid it as much as possible, for reasons before stated. When any portion of the bush is extending beyond the bounds of convenience, I say, reduce it; but only in such cases.

The chief consideration, after admitting the average distance of the young shoots, is to sustain a certain amount of symmetry in the bush, for this of necessity

involves a regular supply of good wood from the base to the top. It must be here remarked, that since the Black Currant bears its principal crop on the annual shoots, rather than on the spurs, means, of course, must be taken by the pruner to excite and sustain a regular sprinkling of such wood all over the tree; and in this case there is not the same necessity for keeping the middle of the bush open, as in the Red and White Currant and Gooseberry.

The *Red* and *White Currants* bear principally on the "spurs," as they are called; these are produced abundantly on the sides of the main stems, of which there are generally nearly a dozen in a well-formed bush. So that our readers will at once see that the mode of pruning must differ widely from the Black Currant and Gooseberry. These bushes are generally trained, from the first, with a given number of branches, which are not often increased afterwards; if they are, it is on account of the great eligibility as to position that they occupy. The first business of the pruner is to run his knife up these main stems, which will be found studded with spurs—some in groups, others scattered; and from these the future crop must be obtained.

Every lateral spur must be pruned back to about half-an-inch, as near as possible; but whilst making use of the term *every*, which is, I confess, rather too sweeping,—let me observe that exceptions frequently occur. To understand these things, our worthy readers must just take a close examination for five minutes of these branches and their spurs. They will find, that the rule, with strong and healthy bushes, is, to produce abundance of side twigs, or lateral spray; and that, as an exception, little diminutive-looking twigs are produced amid these clusters of spray, which are of a sort of intermediate character, appearing as though nature, in forming them originally for shoots, had changed her mind suddenly, and clothed them with embryo blossom-buds. Such lengthened spurs are generally about two inches in length, and as full of blossom-buds as they can be. Some of the finest fruit will be produced from these, and amid the devastations going on with the knife, they must, every one, be retained unpruned. Lastly, all the side-spurring being completed, the tops or leaders of the branches must be shortened, in order to cause them to develop side-spurs as they proceed, which long leaders will not do without the pruner's assistance; about six to eight inches each year may thus be left, the other, or point of the shoot pruned away.

After pruning, I advise the same practice as with the Gooseberries (see page 74), providing they have been infested with the caterpillar; otherwise, it will suffice to give them a slight surface-dressing of any ordinary material containing some half-decayed vegetable matter, for, unless weakly, they do not require much of what is termed muck. It may here be observed that the *White Dutch* kind is of weaker growth than the Reds, and deserves a more liberal soil. Those who have not got *Knight's Sweet Red* should plant some; they are sweeter than others.

R. ERRINGTON.

MOVING EVERGREENS.—GRAFTING CONIFERS.—PENDULOUS PLANTS.

ABOUT the middle of last April, a correspondent asked if it was now too late for *planting evergreens*, and we replied, that it was then rather too early; that June is a better month for that particular work; that July and August are better still; and that September and October are the best time for the removal of all evergreens; that the man, or woman, who had sufficient patience to hold out till October, would, in two years, be in advance of

him or her who planted at once at the end of spring. For many years, when I was in the busy world, I used to make a law, about Michaelmas, in each year, that all planting should be finished, that year, at least, by Christmas. I then used to push, and tear, and strive with all my force; but, like more cost, more honour, the more I planted, the more it seemed to my employers that more planting must be done, before the improvements could be considered as at all like finished. Thus it was, and is, and will be, all over the gardening world,—you may begin late or early, but you never seem to know the end of it.

November is the best month, this season, for beginning *general planting*. I went over Mr. Jackson's nursery grounds the other day, and, from what I saw there, I made up my mind to call attention to this new fact; for new it is, certainly. No one has ever heard a gardener wishing to put off the planting of Evergreens, at least, for a month, in the middle of October; but, if the Messrs. Jackson, father and son, had offered to supply me gratis with Evergreens, to try the experiment, I should rather say,—“No, I thank you; but just let them be for one month longer, as I can plainly see that the frost of the 24th of last April put them back one whole month, at least; besides, you see the *Heliotropes* and *Dahlias* are hardly hurt yet, and I never saw stock so flourishing and green at this late season; you surely do not mean to arrest the growth so suddenly by an earlier “drawing” than a month hence.” But my philosophy went like fiddlesticks, for they were more busily engaged “sending out” than they recollected to have been, so early, during the last forty years. Farmers, who could not go the length of a Laurel-bush a few years back, can now talk about “Conifers and Corn-markets” in the same breath. They must plant, too, and they promise to pay punctually, or “down upon the nail,” at once, to let you see they are in earnest. At all events, if all be true, nurserymen are not likely to quarrel with bakers and soft-loaves this season. Therefore, seeing so many fresh customers in the field, or rather in the nurseries, I would advise a move for November planting at once.

All kinds of trees and shrubs are better on their legs than I ever remember to have seen them in the autumn. Whether you take it in politics, in growth, or in planting, this has been a very extraordinary season throughout. We shall, very likely, have not much winter till after the middle of January, and then we may have six weeks of it as hard as we had in 1830; but, let us hope, not quite so much snow at the beginning of April as we had that season. Now, I challenge all the almanacs about my estimate of next winter, and having been a private Murphy about the fine weather in October, I think I have some claim to urge on plantings of all kinds, and to have it all finished right off-hand before the 15th of January, at the furthest; also, every open spot in the garden, field, and nursery, ought to be turned upside-down, and ridged, and all the wheeling and carting be put off till this great frost comes—if it will really come, as I expect it will, and just about that time.

Late in the spring of 1833, I called on Mr. Godsal, nurseryman, at Hereford, who showed me a *seedling Larch* he had, which crept along the surface of the ground like a Strawberry. We concluded it would make a Weeping Larch; and now you may have it grafted, standard-high, in almost all the nurseries, and as weeping as the Weeping Ash itself. Mr. Jackson's people are famous for grafting it; and I saw fine plants of it there on sale. The way *they* graft it is different from the usual mode, but it seems very successful. It is grafted *on the last year's leader*, nine or ten, or more feet high, and on that part of the leader which is of the *exact diameter as the graft* at this part, the leader is cut clean off with an upright cut, the face of the cut being

about an inch, or a little more. Then the graft is cut to suit, or, with a down-cut, and the cut of the same length as that of the stock. There is no side cut, as in splice-grafting,—only the two pieces put together, and then tied, clayed, and mossed, in the usual way; and they seldom fail. Last spring was the worst time they recollect for such work; yet they did not seem to me to suffer much from it in the grafting way.

I here saw, and for the first time, a newish Larch, from the north of India, *Larix Griffithii*. It seems stronger than the Europan Larch, and to hold the leaves green longer; but that might be from the season, and from being grafted on strong stocks. Now, what can be more interesting to amateurs than to be able to graft trees and plants, of all sorts and sizes, themselves? and here are two fine chances where people say the thing is difficult to do; but the more difficult the better the sport, if you can hit the mark. Buy these two Larches, and let us hear how you succeed in grafting them on the old Larch. This is the first time that the best way of grafting the Larch has been popularly explained in print; but now I should not be surprised to hear that all the Fir tribes would graft that way, and also many evergreens. If so, there never was an easier way of grafting, or more tempting for an experiment.

The *Weeping Holly* is not quite so much so as the Larch; still it makes a fine lawn-plant, when rightly managed, with long, drooping boughs, loaded with berries. The way I should treat a Weeping Holly for the first half-dozen years would be, to disbud the upper or upside buds on all the main branches near the stem or grafted parts, as I can see a tendency to the normal form evinced by such trees or branches as are very robust and healthy, and that tendency ought to be watched and curbed while the tree is young. After that the boughs will reach down and sweep the ground, and carpet it in time, if it were so trained. What could be more beautiful than a Weeping Holly trained into the shape of an arbour, with a garden-seat inside—the boughs clustered with fruit all round and right down to the ground? Then, to train out the points to two feet or a yard from the bottom of the arbour—after that to graft every one of them with the best yellow and best silvery variegated Hollies, and let these rise eighteen or twenty inches, then clip them into a hedge form, and allow them to increase in width as much as they would, but not higher, for fear of diminishing the apparent size of the whole arbour. Who is to be ahead of the Crystal Palace with this style of arbour? We are certainly on the eve of great things all over Europe, and especially so in England, and we must not be much longer held in restraint by apron-strings and loose talking, or more loose writing either: I am too old myself to go to the war, but I cannot bear being behind the rest of you; so to keep up my head on the surface, I have determined to see all London, and as far into the provinces as it is safe to travel so as to get back to my own bed at night; and as I never make a secret of any thing, you shall hear of the lions of the age right earnestly; but I did not think of this when I called at Mr. Jackson's, else I would have looked over his whole nursery, Orchids and all.

By-the-by, he has a second pile of *Barkeria spectabilis*, 100 or 150 plants, all new, from the Mexican grower, and if there are really any better looking plants of them in England, I shall find them out and tell all about them. I saw fine large plants of a new scarlet variety of *Cattleya superba* among recent introductions; the strongest *Calanthe vestita*, and the best eyed one I ever saw, is now in bloom there. A tiny Orchid, from Laguaría, on the Spanish main, the first of the kind ever seen there by the collectors, and, probably, the first of it now in Europe, is just pushing in a glass-case along with large quantities of the gold and silver pencilled-

leaved *Anæctochili* and *Phyllisuri*, to which this new importation is said to be a valuable addition, and a fit associate; having, when they come, soft, deep green leaves, the midrib of each silvery white, and another silver strip or vein running all round the leaf inside the margin. I could just see this plant moving into fresh growth, and that was all. I will look after this new plant as if it were my own. They were moving the *Cattleyas* and all the hardier Orchids to a cooler house for the winter, last week; and I must go again before I can well report on the growth of this season, and on the new additions that have been made to the collections, so that my nursery reports may not appear to be partial.

They told me, what I never heard or heed, that the *Belladonna Lily* may be potted from the borders when the first flower opens on the truss, so to write, without any hurt to the flowers or bulbs. That all will go on in-doors as if no disturbance took place; but if the bulbs are potted any time during the rise of the flower-stalk, that all the parts will remain in the same state of progress for the rest of the time the plant is in bloom. This is real good news at last; for who among us has not often wished a large mass of these beauties in the drawing-room, instead of out, under all weathers, in the open air, and that too at a time when real good flowers are getting scarce?

They have a most elegant-looking, grass-like plant, which hangs down all round the pot, and far below it, when the pot is suspended, which anybody can grow, as it is nearly hardy; any kind of soil will do for it; but I think if it had one-half soft boggy peat, and the other half of common garden soil, it would like it better than anything; however, the secret is to keep a saucer full of water constantly under the pot, and to keep the pot and saucer hung up close to the doors or ventilators. I know it increases fast, and one plant will soon make half-a-dozen. It is not exactly a grass, botanically, but a sedge, and the *Naiad's Hair Grass*, would be a good English name; the book name is *Isólepis complanata*; but recollect the accent is on the *o* in the first name, not on the *e*, as country people pronounce it. I forgot, last year, to say this elegant thing was much prized at Shrubland Park, where I saw it for the first time, and now, seeing that they countenance hanging baskets at the Crystal Palace, every one will be anxious to keep so far in the fashion as to have some hanging plants or another; perhaps, they will soon give prizes to this style at the Shows. At all events, I shall hunt them out, and dish them COTTAGE GARDENER fashion. D. BEATON.

FAILURES IN BLOOMING PLANTS.

A MEDICAL gentleman, who has built for himself a small Greenhouse-Vinery, and a pit heated by hot-water—on the lid of the tank of which he hopes to get some bottom-heat—sends us the following particulars:—

1. "I have a large plant of the *Begonia cinnabarina*, which has never bloomed with me. I have grown it now two years; it has four stems in good health." The quantity of stems, and the high health, seem to say there has been nothing wrong in the growing. As the plant blooms rather freely in a young state, we are rather doubtful as to the reasons why it has not bloomed; but are led to expect that it had been kept growing too late, and in too shady a place the previous autumn; and that the juices of the plant were, therefore, not sufficiently organised to produce blooming shoots. Before *Prestoniensis* and other orange-scarlets had appeared on the scene, I looked on *Cinnabarina* as a gem of the first water, and was rather successful in getting it to produce flowers freely. The key-note to its culture is obtained from the fact, that it has a fleshy

root, and dies down, or should die down, to the surface every autumn. If kept growing, and in a somewhat shady place during the autumn, it will very likely serve you, as many bulbs would,—give you plenty of shoots and leaves the following season, but no, or few, flowers. Commencing from the present time, the plant, if not already drying up its stalks, should be placed in the airiest and sunniest part that can be commanded; a temperature not much below 60° should be given to it, and water be gradually withheld until the stems get brown and the leaves fall. Give them then almost no water, and by keeping the plant full in the sun the stalks will either fall, or give you, by their appearance, a hint that you may take them away with perfect safety. All this would have been better attended to six weeks or two months ago; but better late than never. The keeping the plant green and growing through the winter is next to completely fatal to your getting it to bloom next season. After the herbaceous stems have thus died down, the earth in the pot should not be dust-dry, but it should be dry rather than wet, but not so thoroughly dry as to mummy-shrivel the roots. I generally laid the pot down on its side in a moist place, or packed it, with other things requiring similar treatment, in a little moss not thoroughly dry, such as *Gloxinias*. When in this dry and resting state a temperature of from 45° to 50° answered admirably. When I had a house, in February, March, or April, with a temperature of from 55° to 70°, I used to place the pot in it, and gently moisten the ball of earth with warm water, say about 75° or 80°. Ere long, the young shoots would begin to peep through, and, when an inch above the pot, a compost, chiefly of equal parts of peat and loam, having previously been prepared and heated and aired, the plant was turned out of the pot, a good portion of the old soil shaken away, and then re-potted with a pot a size larger, or a similar, or lesser size, according to the state of the roots. After this, keep the plant a little shaded and close for a few days; but, as soon as it will stand it, give it all the sun it can get, and an average temperature at night of from 55° to 65°, with a rise of 15° from sunshine. As the shoots grow, give plenty of water, and let it be weak manure-water, two or three times a week; or top-dress with decayed cow-dung. Under this treatment the plant will generally show bloom freely, when, though the water must be continued, the top of the plant must be kept drier and more airy. In fact, it flourishes well in a common greenhouse in summer, after the flowering has commenced. If the plant should grow very luxuriantly, and show no signs of blooming by Midsummer, keep it full in the sun, give it more air and less water, and the check will bring bloom-buds in plenty, if it has not been mis-managed as to the maturing part the previous autumn.

* This is one of those plants peculiarly serviceable to amateurs, and those scarce of room in winter; as, during its resting period, it may be kept anywhere where the temperature does not often descend below 45°. In fact, I have seen it flourish very fairly in a greenhouse in summer, where it had a lift from a Cucumber-box in April, and was kept during winter at the bottom of a cupboard near a kitchen fire-place. With the exception of liking more heat—a conclusion to which we should naturally come, knowing that it was introduced to us from no great altitude in Bolivia—*Cinnabarina* requires much the same treatment as the cottager's *Begonia*, which is grown so plentifully in windows, and which has generally been named *Evansiana*, or *Discolor*. I previously directed attention to this somewhat rough, yet splendid, old plant for a greenhouse, when it can previously receive a little help from a Vinery, or a Peach-house, or any place where a temperature of from 5° to 10° higher than the greenhouse

can be given it for eight or ten weeks in spring. In such circumstances, as soon as the young shoots rise two or three inches in height, fine strong ones, with their tubers attached, are placed in rough loam and leaf-mould, or dried cow-dung, in a large pot; and these, with the encouragement of the extra heat above alluded to, will yield a mass some three-and-a-half feet in height, and as much in diameter, that will be covered with pink flowers, and be no mean object in the finest greenhouse.

2. "I have a large plant of the *Stephanotis floribunda*, growing round a Globe trellis; it grows freely, but does not bloom; it is three years old. How can I get it to bloom about next August?" I suspect that the plant is too thick on the trellis; that it has been kept growing too long in the autumn, and too hot and moist during winter; and I suspect that a remedy in these particulars would give you more success. In the eighth volume, I mentioned that I had tried this plant in a warmish conservatory, the heat seldom falling below 45°, unless in very cold weather. Last winter, it was frequently below that point, and this made this fine Madagascar plant kick up its heels at the insult, and there is only a portion of the plant near the ground alive. I mean to try it again, however. I there mentioned two modes of growing and pruning, and in both, the thinness of the shoots is an essential to success, as well as full exposure to sunlight. By the first mode, the shoots made this season, after being duly thinned and tied in, are intended to bloom freely next summer. Nothing, therefore, should be done to them except stopping their points in the autumn. As the days shorten, water should be gradually withheld, so that during the whole winter, enough and no more should be given, just to keep the plants from flagging; and a temperature from 45° to 50° at night will be quite sufficient, allowing the plant all the light and air possible. In the spring, take means to give the plant a rise in temperature of from 10° to 20°, and water in proportion; and you may expect the buds to swell, and to yield a good profusion of bloom. The other mode, and which, for general purposes, I prefer, is to bloom the young plant on the young wood of the current year; and then, though the mass of bloom may not be so great at one time, it will continue for the most of the summer. A plant so treated, that was very gay in June, after resting a little, has been very well supplied with bloom during the last two months. Here the same autumn treatment must be given as in the last case, to ripen the base, at least, of the shoots; the same rest in winter, after cutting them back a little in autumn, to give more light for the maturing process; and even disbudding backwards, as I recommended some time ago for Vines. During winter, or rather just before you subject the plants to a higher temperature, cut back to within two, three, or more buds of the base of each shoot, according to the room you can give them to grow; and, just as in a Vine, the flowering of the young shoots during the summer will depend upon the ripening of last year's wood before the dark days came; and then comparative rest during the winter months.

With such plants, we are all apt to go wrong; from an unwillingness to thin and prune out, when growing; consequently, we allow the young shoots to get into a mass instead of keeping them some six inches apart. Some practitioners recommend a good portion of peat in the compost; but after the plant is fairly started, and large enough to be transferred to a twelve or eighteen-inch pot, the compost should chiefly consist of sound fibry loam, as that will have a tendency to produce stout, short-jointed shoots. A plant may remain in such a pot a number of years, if the drainage is all right, merely by picking off the decayed surface soil, and adding fresh, with a top-dressing of

dried cow-dung, covered over for the sake of neatness with a little fine soil. Our correspondent will, therefore, see that his plant will require some judgment even now; and he will have shortly to decide what mode of pruning he will follow. Success in both will be greatly owing to the state of the wood in November. The first mode might be tried early, and if that did not please, prune back for late blooming; and if the success of that should not be so great as expected, the wood could be well ripened for 1856. The plant seldom blooms freely and continuously until from three to four years old.

3. "The *Gardenia Stanleyana*, though a good plant, does not bloom. It has grown freely this season, and I have had it out-of-doors to ripen the wood." I presume you have now got it in-doors, as very little frost would irreparably injure it. Though a native of Sierra Leone, it stands a comparatively low temperature in winter, if dryish, and in a state of rest. Not but that the plant will flourish, by giving it here, all the year round, a tropical heat, such as it enjoys at home; but in our dark winters, such a system would give mere growth at the expense of the free production of flowers. Unnatural though in many respects it be, we must make dryness, and a low temperature in our winter months, after taking the full advantage of an autumn sun, a substitute for the dry heat plants frequently experience in warm latitudes. It is seldom that this plant blooms freely until it is about three years old from the cutting. Unlike many other *Gardenias*, its flowers are not confined to the neighbourhood of the points of shoots; but the flower-buds are formed along the young shoots, and hence its many, large, bell-like, drooping flowers, have a magnificent appearance. Supposing, then, that these shoots on this plant are well-ripened, two courses are open by the first of which flowers may be obtained more early; and by the second, at a later period. In both cases, the plant, after the wood has been well-ripened, must be kept dryish, and in a temperature of from 47° to 50° during the winter. If supplied with heat and moisture during winter, the buds will swell, and either drop, or rot, from the want of sufficient sunlight to open their blossoms. If kept in this dryish and cool condition until the middle or end of February, a gradual rise then of from 15° to 20° will swell the buds, and, ere long, reward you with blossoms. The second mode is the one I would prefer. Secure the hardening of the shoots by all the sun possible in the autumn. As winter approaches, remove a number of the buds toward the end of the shoots; or, if that is too troublesome, shorten them to a third, or a half of their length, so as to concentrate organisable matter in the buds nearest the base of the shoots. Keep the plants in a sunny, airy place, and just damp enough to keep them from flagging or shrivelling during winter, and at a temperature from 47° to 50° at night,—a few degrees higher will do no harm. Then in February, or March, or later, if you cannot before, just as soon as you can command a moist temperature of from 60° to 65° at night, and from 75° to 85° during the day,—and if a little mild bottom-heat all the better,—prune back your shoots to within a couple of buds, or so, from whence they started last season,—spur them, in fact; water with warm water, syringe the stems with the same, and ere long the buds will burst into healthy, strong shoots. If too many appear, to give room for the expansion of the leaves, thin them; and by the end of April, onwards through June and part of July, you may expect to be rewarded with fine flowers. A little more air should be given to the plant as the flowers begin to expand, and as autumn approaches, a drier atmosphere should be secured, with all the sunshine possible, and the course may then be persevered in, of resting in winter, and pruning back and starting into growth, in a moist heat, in spring.

From the size of the drooping flowers, this plant will always look well when grown to one stem, from three to five feet, or higher, as a standard; and the plant, when partially snagged-in in winter, would take up but little room, as dwarfier plants could go beneath it. As to the general management, a few words will here suffice. There is no great difficulty in striking the young shoots when taken off with a heel in spring, and inserted in silver sand, in a hotbed, with a bell-glass over them, and a little air given at night. In the first pottings, sandy peat should preponderate over the loam, but when the plant is large enough for from an eight- to a fourteen-inch pot, the fibry loam should be the chief part of the compost; and though little water is wanted in winter, it will want a good supply when growing and blooming; and at these periods, weak manuring, or top-dressing of rotten dung, or a little superphosphate of lime will be relished exceedingly, the size of the flower depending greatly on the luxuriance of the shoot.

R. FISH.

(To be continued.)

NOTES AND GLEANINGS FROM ALTHORPE GARDENS.

(Continued from page 80.)

Pulley Lines.—Unless I should forget, I may mention that these are mostly all small iron chains, instead of ropes, and the sashes being mostly large where they are used, they are found preferable every way, and are a great saving in expense.

Besides the houses referred to, there are the early vineries and ranges of pits close to Mr. Judd's house that demand a passing notice. The larger range of pits seemed to be managed to suit stove plants, greenhouse plants, and cold pit plants. Here were a quantity of splendid *Azaleas*, healthy, luxuriant, and clean; and here I noticed a simple improvement on the mode of shading I previously recommended; which was to have the cloth fixed to two rods, longer by a foot or so at each end than the width of the pit. One rod was laid down at an end, and taking one end of the other in your hand, and allowing the other end to lay in the wall-plate behind, and as you walked along in front, the end behind turned round and went along with you, so that your shade was left on the glass behind you. The simple improvement to the process was fixing this upper end of the rod into the centre of a round piece of wood, some four or five inches in diameter, so as to give you a little wheel for running along the wall-plate.

Another range was at that time devoted chiefly to the striking of bedding-plants; no bottom-heat was at all used. Few, who know what they are about, think of that in the autumn. But, glancing along these pits, before breakfast, what delighted me most was, observing that every light was tilted up an inch or so behind, which admitted air during the night, and, just as the sun began to strike upon them a little rudely, the intelligent-looking foreman walked round and took it all away. This is an idea I have been hammering at for the best part of twenty years, and I am pretty well obliged to hammer at it daily, to get it attended to. Mr. Judd's cuttings demonstrated the utility of the system; there were no unseemly blanks, no damping leaves, no spindley-looking shoots—telling of growth upwards, instead of extension downwards; though, to save shading, another favourite idea of ours had been carried out, and the cuttings were at a considerable distance from the glass. When such ideas are properly carried out, the copious directions about drying and wiping bell-glasses will, to a great extent, be ranked with the empiricism of bygone times.

These Vineries were empty of fruit, all low, wide

houses, but containing, at least two of them, firm, well-ripened, if not extra-luxuriant wood. The earliest was shut up, and was showing fruit. It had started of its own accord, with all the glass off, and though every retarding means had been taken to prevent it. As in all such cases, the stems were rather weak, though, no doubt, they would greatly increase in strength afterwards. Last season, Mr. Forbes, at Woburn, was rather put out at his Vines showing so early; but he got some good fruit. Those who will have Grapes so very early that the last of the late crop just gives way to the early one, must not expect, continuously, such heavy crops. The fact of these Vines coming thus early just shows how pliant plants may become. After being gradually inured to the time for a series of years, it will just be as natural for these Vines to break in the end of September and October, as it will be for their brethren to do the same in March and April. To keep them late, they must be encouraged to grow longer, as it would hardly be possible to rest them much in the hottest months of our year.

Air Pillars.—These houses have pits inside, telling of previous Pine-growing there; the borders rise in front close to the spout and the wall plate, no front air could be given, therefore, without lifting or shoving the lower sash, and for this the border must not only be trampled upon, but a considerable risk of breaking glass incurred; while the moving of these sashes would bring the cold air in direct contact with the stems of the Vines. To remedy this, a square opening was made in the front wall, just above the water-pipes, and about fifteen or eighteen inches below the surface of the borders outside; from this opening a sloping drain is taken from about four feet from the front of the house, and terminates there in brick pillars, two or three courses high above the level of the border. All the air-giving is thus easily managed from the inside of the house, by opening these small places in front, less, or more, and sliding the sashes at the top. A little care was necessary in guiding aside the roots in forming these air-shafts. One obvious reason for raising these air-shafts thus above the level of the border, is to secure the air-opening, when the border is covered with litter in winter. A small wooden door or slide is used for shutting and opening inside. There can be no question that it is of importance to admit front air as near the level of the floor as convenient.

Concreting the surface of borders.—This is a large subject. Mr. Judd found, that when he left the concrete on several years, the Vines did remarkably well, deriving plenty of moisture from the neighbourhood by capillary attraction, while the roots of the Vines, by the means of heat, first of the covering, and then of the sun, were brought close to the surface. I found the same thing when I used a covering of tar. Mr. Judd generally puts the concrete in now yearly for his early houses, and this enables him to give the borders a rich surface-dressing during the summer. The concrete is easily taken off when an opening is commenced at one side, and a little left will be an advantage rather than otherwise. I saw the material used last year in the shape of a heap of sandy, gravelly, limy matter. A few bushels of fresh lime and water to make it a suitable consistence, will, I dare say, have ensured the application of a thin smoothed layer to the border before this time, which will throw off wet, and a covering will have been applied to the early house, to keep the heat of the summer from passing from the earth by radiation. Here, I also observed a very simple, but capital mode for knowing at any time the heat of the border,—a matter of great import in early forcing, namely, placing near its centre a row of small round drain tiles longitudinally, a few inches beneath the surface, and having a thermometer fastened to a long iron rod, by pulling out which

you could always know the heat of the border, and regulate the protecting medium accordingly.

I shall notice but a few things more. On the east-side of Mr. Judd's house was a small greenhouse, containing some good *Fuchsias*, grown chiefly on the stem principle. At the side of door on the west side were two nice *rustic vases* filled with flowers, which it might interest many readers to know how they were made. A concrete red paving tile was taken as the base, on that was set upright a round draining tile, on the top of the draining tile was fixed a good sized flower-pot; these were fixed together with cement, with an opening or two left at bottom, for the escape of water, the whole was then covered thickly with cement, and, while wet, small pieces of flint and pebbles were inserted all over it, and the effect on the whole was very good. I began fancying how vases with a casing of shells, &c., so made, would look. I expect that this will give a hint worth imitating by many of our friends.

Bedding Dahlias.—Dwarf ones of these will soon be prized. The *Purple Zelinda* is splendid as a mass, though the individual flower the florist would at once reject. The *Scarlet Zelinda* grows too spiry, its flowers are too thin. On a border close to Mr. Judd's house was a better reddish one, sent out by Mr. Gaines, called *Prince Arthur*; the flower is good, the habit very dwarf and compact; a thorough acquisition. About the next best I have seen for a bed is the fancy buff and orange one, called *Miss Weyland*, which will make an excellent bed, the flower being better, and the plant dwarfer, than *Mrs. Labouche*, though that is also good. Several whites are out, and of these, one called the *Queen of Whites* I think is as good as any; but the best dwarfish white bed I have seen was the old *Bragg's Antagonist*, as layed down and managed by my neighbour, Mr. Fraser. This is a growing subject, from the numbers of inquiries that reach me; and those who have good kinds, that will naturally not grow above fifteen inches high, will find there will be no want of a demand for them.

Seedling Scarlet Geraniums.—Behind the principal range of houses in the kitchen-garden is a very pretty flower-garden, for containing good plants, *et ceteras*, and to supply cut-flowers for nosegays, &c., and among these I found some beds of a *Scarlet Geranium*, not yet common, and which I thought had been lost, as it is nearly three years since I saw one, along with Mr. Glenney, in awarding it a prize as a desirable *Scarlet* at Northampton, though then in a small tiny pot. The colour of the flower is a bright scarlet, with a white eye, about the size of *Punch* in truss and individual flower, and with the habit, as near as may be, of the *Improved Frogmore*, or, what some people call, the *Trentthorn Scarlet*.

Propagating Roses.—There are also borders in which a great many standard Roses are grown; but what struck my attention was a long border, with hundreds, if not thousands of beautiful plants of the best Perpetuals, &c., such as *William Jesse*, *Mrs. Elliot*, *La Reine*, *Madame Laffay*, *Baronne Prevost*, *Geant des Batailles*, growing vigorously about a foot apart, and another section seemingly a year older; and I saw in a moment whence the huge oval in the pleasure-grounds was to be filled; but how these plants came there is what some thousand readers will want to know, and that I will tell just in a word or two, and then leave them to adopt Mr. Judd's or Mr. Beaton's plan, just as the bent of their inclination, and the circumstances and conveniences at their disposal will enable them to decide. Mr. Judd makes his cuttings about the middle and towards the end of October. He prefers those he can take off with a heel, that is the point where the young summer shoot joins the older wood; but he is not at all particular; making cuttings of any part of the shoots, except the youngest and

softest parts near the points, which he rejects. Those not having a heel are cut across at a bud, and in a sloping direction above one, so as to make the cutting about four inches long. No leaves are left on, except, perhaps, a part of a petiole and leaf that covered the upper buds. Meantime, a piece of ground has been prepared for them, forked over, and a little leaf-mould, &c., incorporated with it. Over this is placed some three or four inches of road-drift, or other sand, and then hand-glasses are placed over it. The cuttings are inserted thickly in these hand-lights, leaving only about an inch of their points exposed, and slightly watered, and then covered with the tops of the glasses. One sort is generally put under one glass; with the exception of the slightest protection in extra severe weather, the cuttings and glasses are allowed to look after themselves during the winter. As the warm days of spring come on, a little air may be given when the pots are emptied of their bedding-plants in May. These Roses are lifted with a fork; some will have longish roots, some just beginning to root, and some few, perhaps, not showing much signs, and as they are lifted they are potted, and kept in a close frame, or pit, for a few weeks, until they are growing freely, when more air is given, and, ere long, they are planted out-of-doors in a border, and appear in October, as I have narrated. Mr. Judd says, that there are some of the perpetuums, though they strike, yet they will not thrive on their own bottoms, and that is just the sort of information we all crave after; though, be it remembered, there are few things more capricious than the Rose, as one mode that will not suit one place may do well in another.

Water Ram.—The value of these simple helpers have not yet been sufficiently prized. Some of our mechanical and engineering friends might do good by giving us a paper on their utility, construction, and circumstances in which they could be most profitably employed. From the situation of the kitchen-gardens on high ground, we should not expect to find it too well supplied with water. All the rain-water from the houses was preserved in tanks; still the carting of water was a serious item in the twelvemonth. In the orchard are two or three marshy places, at different levels, which an athletic fellow could jump over. These are fed by a small spring, which never gets dry, though it runs slowly. A small brick reservoir was made so as to give the requisite weight of a column of water, on the other side the ram is fixed, and a drain cut to the necessary depth, to take the water that escapes away, and the movement of a plug sets it a going or stops it. There is sufficient water to work it for three hours, and that will do more than fill the cisterns at the houses, &c. For expediting the application of the water, a long tube of *Waithman's Anti-rot flax-tubing* is screwed on the taps, and Mr. Judd considers it much preferable to gutta pereha, and other praised novelties.

I have thus brought some of the features of Althorpe within the cognizance of our readers, and I hope in such a manner as to be somewhat instructive—the great end, after all, we ought ever to keep in view in visiting or describing places. What little I saw of the agriculture, showed that the lands belonging to the Earl of Spencer were well cared for; and the sight of many pretty cottages, some near at hand, and many more at a distance, showed that here, as in many other places, the principle was not only recognised, that “property has its duties as well as its rights,” but that a warm-hearted feeling of kindness, based on the mutual dependence of all classes on each other, is more than ever shown by the wealthy to the humble—leading, let us hope, to a still greater and glowing exhibition of true generosity on the part of the employer, and an increased industry, intelligence, and faithfulness on the part of the employed.

R. FISH.

GREENHOUSE FERNS.

(Continued from page 63.)

POLYPODIUM.

THIS genus formerly contained upwards of two hundred species, but, as now arranged, is reduced to about eighty species. It was an incongruous assemblage, widely different, and is now distributed among nine genera. The true Polypods may be known by their uncovered seed-cases, and simple, forked, or pinnate veins. As now reduced, though there are upwards of seventy species that require stove, and eight that are perfectly hardy, yet there is only one species that I can recommend as being suitable for the greenhouse, though many of the hardy ones may be grown there, and are very ornamental, throwing up finer fronds than they do in the open air.

P. SUBPETIOLATUM (Short-stalked).—A Mexican Fern of considerable beauty. Fronds pinnate, growing with ordinary care, two feet high, narrow, lance-shaped, covered with very fine short hairs; pinnæ, wings, or leaves, quite smooth, with very short footstalks. Easily increased by dividing the scaly creeping rhizoma.

WOODWARDIA.

A commemorative name in honour of Mr. Woodward, a rather eminent British botanist. The characteristics of this remarkable genus consists in the seed-cases being much sunk in the leaf with a cover that is hollow like a vault, and by the veins being very much divided into small irregular squares.

W. RADICANS (Rooting).—Very nearly hardy. Native of the warmer parts of North America. It is a large, growing Fern. I have had it three feet high, and as much through the fronds, spreading very much. Unless the space in the greenhouse is large, this Fern should not be introduced. Fronds irregularly pinnate, of a lively green; pinnæ irregular in breadth and length, with the edges cut into spine-like segments. The fronds form at the top a large knob, which soon sends forth roots (hence the name, *Radicans*), and forms new plants. It is a common, rather coarse, but curious Fern.

This completes my list of Greenhouse Ferns. I have only to add a few hints on their culture. Like most other large classes of plants they thrive best in a house by themselves; but, as I remarked before, many of them may be grown by the sides of the path, just under the first shelf of the stage. The more tender kinds, such as *Chielanthus* and *Nothochloena* must be placed on a shelf near the glass, because the drip from greenhouse plants on the stage would quickly destroy them. If convenient, a nearly upright mass of rockwork at one end of the greenhouse would suit many of the species. The soil for them, unless otherwise specified in the catalogue, should be stronger than that for Stove Ferns. I found the following a good mixture for them:—two parts mellow, turfy loam, one part fibrous peat, and half-a-part partially decayed tree-leaves, with a few small pieces of charcoal regularly intermixed among the compost, together with plenty of sand. I generally prefer mixing the compost a day or two previously to the one set apart for potting. I think, if it is mixed some months before, it becomes so solid that the fine roots of the Ferns cannot so readily, if at all, run through it; and besides that, it sooner runs together, and will not so readily permit the water to pass through, and thoroughly wet the interior of the ball of earth in the pot. Excepting for very delicate kinds, I find they do best in rather large pots, providing they are thoroughly drained. The best season for potting is in early spring, just before the new fronds begin to shoot.

The mode of potting is simple, yet requires care. Bring the plant to the potting-bench, reverse it, and place one hand under it close to the ball, then thrust

the finger, or a blunt stick, through the hole at the bottom of the pot, pressing hard to force the ball out of the pot. The roots of the strong growers cling to the sides of the pot very tenaciously, and require considerable force to separate them. In very obstinate cases it may be desirable, rather than injure a valuable plant, to break the pot, but the stroke to do it must be gentle, or the roots will be bruised. Having got the ball out of the pot, then pick out carefully all the old crooks used for drainage; the roots in a healthy plant will be here very numerous. Then with a sharp-pointed stick pick out some of the old soil all round the ball, and give it a smart stroke or two on the hand. This will loosen some roots, and make them ready to enter into the new soil. Have ready the pot well drained with a few pieces of the rougher parts of the compost (or a thin layer of moss) on the drainage. The pot should be so much larger than the ball as to allow the operator to thrust the soil down between it and the sides of the pot. Fill in as much compost upon the covered drainage as will raise the ball rather above the level of the rim of the pot, so that when it is pressed and shaken down the ball will be below the rim, about the thickness of a finger or more, if the pot is very large. Then fill in the compost round the ball, and finish by a smart stroke or two on the bench. Level the soil, and then the operation is finished; and so proceed till the whole are gone through. Give a very gentle watering through a fine-rosed pot, and replace them in the greenhouse. By potting them at the season above indicated, they will not require shading, and will be slowly making new roots to sustain the new growth.

This potting time is a good season for increasing all such as will bear dividing, but all plants so divided off should be placed either in a close frame or in a shady part of the house.

Summer Management.—Where Ferns are grown under the stage, and the greenhouse stage is occupied through the summer with flowering-plants, the Ferns will be greatly benefited if placed out-of-doors from the end of May to the middle of September, only remembering to keep in such as I have indicated as being rather delicate with regard to wetting their leaves. The situation for their summer residence should be one where they will be shaded from the midday sun, and if the pots are plunged in moss over their rims the Ferns will thrive all the better for the cool, moist qualities of the moss; only keep a good look-out for slugs and destroy them. Remove them in-doors early in September, and then give them plenty of water, gradually reducing the quantity till in the depth of winter the soil is only just moist enough to keep them from drooping. By following these simple rules, Ferns in the greenhouse will thrive and be very ornamental. T. APPLEBY.

EARLY-FLOWERING BORDER PLANTS.

(Continued from page 64.)

IBERIS.

From *Iberia*, the ancient name of Spain. In that country the species abound. A genus of plants well known, the common annual *Candy-tuft*, growing now almost in every garden. The perennial species are very ornamental in the mixed flower-border, or on rockwork. Many of the species are as yet rare in cultivation.

I. conferta (Crowded).—Native of Spain, with white flowers appearing in May; growing only six inches high. Increased by seeds, or by cuttings, in June, either put in pots in sand under a cold frame, or in sand under a hand-glass behind a low north wall.

I. contracta (Contracted).—From Spain, with white flowers in May; flowering three inches high, a pretty compact species. Increased by seeds and cuttings.

I. pumila (Dwarf).—A low-growing, little, evergreen bush, from Sicily, with white flowers, in May. Increased by division, seeds, and cuttings.

I. saxatile (Rock).—A rather tall-growing species, from the South of Europe, with white flowers in May; growing nine inches high. Increased by seeds and cuttings.

I. semperflorens (Ever-flowering).—This is almost a shrub; growing eighteen inches high. Flowers white, in May. Native of Sicily. Increased by seeds and cuttings. Frequently flowers in the Autumn as well as May.

I. sempervirens (Evergreen).—From Candia. This is the common perennial *Candy-tuft* of our gardens. The Florists near London grow hundreds of pots of it for Covent Garden, and for hawkers to carry out in their basket, or little hand-carts. Such is the love of flowers by the people of London, that any plant green and in flower, especially in the earlier months of the year, finds plenty of customers, from the poor inhabitants of three pair of stairs back, to the wealthy shopkeeper's lady in Regent-street. All love flowers more or less, and many a page might be filled with the history and statistics of the immense quantity of cheap plants that are annually raised and sold in the streets of the great metropolis of Great Britain.

This *Candy-tuft* grows six inches high, colour white, appearing in April and May. Increased by taking up the plants, and dividing them into sections, with roots to each, which divisions will flower well the following year, also by cuttings. Old plants not divided should be cut in to form compact bushes, or tufts, immediately after the bloom is over.

IRIS.

Fleur-de-lis.—The Flower of the Eye; so named from the beauty of the flowers. There are a great number of species, and also varieties, produced by the skill, patience, and perseverance of the florist; but more especially in such as have bulbous roots, to which I shall refer hereafter. There are upwards of eighty recorded species of what are called herbaceous species, though many of them keep their leaves, and thus enliven the early border with their green leaves all the year. The flowers are mostly very large and handsome, and there are almost every colour under the sun, excepting scarlet, in the different species. They are very hardy, and easily cultivated, and all increased by division.

I. acuta (Pointed-leaved).—Native of Siberia. Flowers in May, colour blue; growing two feet high.

I. amena (Lovely). From Russia; growing a foot high. Flowers in May, colour delicate blue.

I. arenaria (Sand).—Hungary; growing six inches high; in May; yellow.

I. aurea (Golden-yellow).—From Germany; May; two feet high.

I. bicolor (Two-coloured).—South of Europe: purple and white; growing eighteen inches high; in May.

I. biglumis (Twice-glumed, or two-rowed).—A dwarf, pretty species, from Siberia. Colour a beautiful blue, in May.

I. bohemica (Bohemian).—One foot high; in May; colour a lovely blue.

I. cristata (Crested).—This is a very pretty species, from North America, with light blue flowers; six inches high, in June.

I. flavissima (Very-yellow).—A Siberian species, flowering in May; growing nine inches high.

I. flexuosa (Zig-zag).—From Germany. Flowers white, in May; growing two feet high. A rare and desirable species.

I. germanica (German).—The varieties of this handsome species are a legion, they are so many. Mr. Salter,

of the Versailles Nursery, Hammersmith, enumerates in his catalogue more than fifty varieties. Botanists only recognize one (*alba*), the white-flowered. The species bears the smoke of large towns better than almost any other flowering plant.

I. HUMEI (Sir A. Hume's).—From Nepal. Flowers as early as April; grows two feet high; colour deep blue.

I. MONNIERI (Moumier's).—A dwarf species, flowering in May; producing yellow flowers. Native of Greece.

I. NEPAULENSIS (Nepaul).—Another choice dwarf species, with blue flowers, in May.

I. ODORATA (Sweet-scented).—From Siberia. A desirable species, with deep-blue flowers, in June; two feet high.

I. PRISMATICA (Prismatic).—From North America; with blue flowers variously shaded; grows only a foot high; and blooms in May.

I. PUMILA (Dwarf).—An Austrian plant; growing only two inches high; with blue flowers, in May. There are two varieties with white, and white and blue flowers. I have had patches of the pretty plant more than two feet across, covered with flowers. It thrives best in a light soil fully exposed to the sun.

I. RETICULATA (Netted).—From Spain. This is a lovely flower; the petals are beautifully veined or netted. Grows only three inches high, with blue flowers, as early as March.

I. SIBERICA (Siberian).—A tall species, blooming in May, with light blue flowers. There is a variety with white flowers, and another with double ones, a rare circumstance in this genus.

I. SUB-BIFLORA (Sub-two-flowered).—From Portugal; growing a foot-and-a-half high, with violet flowers, appearing in June.

I. SWERTII (Swert's).—A Siberian plant, with white flowers; growing two feet high, and blooming in May.

I. SUSIANA (Susian).—From Persia; with very large striped flowers, in April. A shy bloomer, but very large and handsome.

I. TRIFLORA (Three-flowered).—An Italian species, remarkable for producing three flowers out of one spatho; grows a foot high, with blue flowers, in June.

I. VERNA (Spring).—One foot high, with purple flowers; early in April; native of Virginia.

I. VERSICOLOR (Various-colours).—North America. Flowers in May. Introduced so long since as 1732.

I. VIOLACEA (Violet).—A lovely dwarf species, native of the South of Europe; blooming in May.

This may appear a long list, but, notwithstanding, it is a select one. I consider the above the best of the genus that bloom early. There are at least as many more that are early in unfolding their flowers.

LATHYRUS.—EVERLASTING PEA.

Everybody admires the *L. latifolius*, the common perennial Pea, but it is not an early bloomer. In the genus there are, however, two or three that bloom early, and they, in consequence, have a place here.

L. CALIFORNICUS (Californian).—A hardy climber, dying down in winter; growing four feet high; and blooming, with purple flowers, in June. Increased by seeds sown in April.

L. MAGELLANICUS (Magellan).—Purple flowers, in May; growing three feet high; from Capo Horn. Increased by division and seeds.

L. MYRTIFOLIUS (Myrtle-leaved).—Red flowers, in May; growing three feet high; from Pennsylvania. Increased by division and seeds.

T. APPLEBY.

(To be continued.)

ERRATUM.—Page 63, for *Heuchera*, read *Heuchera*.

LARGE TREES IN KITCHEN-GARDENS.

It is admitted by every one that a well-grown tree is among the most beautiful objects of nature, and certainly there are few objects that can compete with it, more especially when the tree has attained that majestic growth which entitles it to be regarded as "a fine specimen;" and as public taste now only recognises a tree to be fine when it has been allowed to grow as nature intended it, the general acceptance of the term, "fine specimen," is usually meant to represent only such trees as have attained that growth, rather than of those formal or artificial objects which owe their form to the mutilations they have received at the hands of the would-be-improver.

Though a fine tree is an object worthy of admiration, be it of whatever kind it may, yet there are certain positions in which its fine appearance may be more than counter-balanced by the evil it creates. A fine tree may ornament a lawn very much; but if it overhangs the windows of a house its beauty will hardly compensate the inconvenience, and, consequently, after many parleys and consultations amongst those interested in its welfare, &c., it is at length condemned to be cut down, and after its removal there is a general relief, and even the most strenuous advocates for retaining it, turn round and join in the general congratulation at its departure.

This feeling is far from reprehensible, for a love for trees is generally implanted in the breasts of all, and to part with those which are, in a certain degree, hallowed by the associations connected with them, seems a sacrifice we are not prepared any day to make; but once the object gone, there is a general exultation at the "improvement," and ingenuity is set to work to devise what more can be done to carry out the reform so unexpectedly begun; and it would not be difficult to point out instances wherein this work has been allowed to go to such an extreme, that when altering has at length begun, its spirit seemed to overcome all before it, and alteration for mere altering's sake would seem to be the order of the day. In one respect, however, operations in a garden, shrubbery, or plantation, differ from other mechanical work; for while the material operated upon, in the latter class, suffer, and become much injured by each change, those of a natural kind often improve by it; and it not unfrequently happens that "Nature" steps in to amend our treatment of her offspring; for trees, or shrubs, mutilated in taking up, as well as many other things injured at our hands, are often brought round again by the all-healing powers of that important agent, so that it often happens that clumsy and unskilful work turns out successful, in consequence of the after-assistance it receives from sources over which we have no control; and somehow, we do not at all times allow sufficient merit to that all important source of our successful culture, but attribute too large a portion of it to some particular mode in which we have treated the article. But as this is wandering from the subject of large trees, I must beat a retreat, and, with the reader's permission, make an attack on "large trees" in certain situations, which now and then I am grieved to see them occupying.

As has been said above, a fine specimen of a tree is always a beautiful object to look upon, whether its top expands into that spacious form we see so often in our native deciduous trees, or shoot upwards with the grace and elegance of a Silver Fir. Both these are very good, but taking the subject in a less extended point of view, a tree of considerable size, and loaded with fruit too, is, in the eyes of many people, a more delightful object to look upon than the others; but this is the very tree I am here disposed to make the attack upon; not, certainly, when it occupies a position in the back-yards to a house, although, in the latter case, it may become a sort of receptacle for all the sticks and other missiles that may be thrown at it to divest it of its fruit, neither is it

always out of place at the front of some houses; nor in a field, plantation, or many other places; but there is one place from which it ought to be banished if possible, and that is the "kitchen-garden."

In making an attack on large standard fruit-trees in a large garden expected to grow good vegetables likewise, I know I shall be met by the enquiry "Where are we to have our fruit from, if such trees are taken away?" This query is, I am aware, not very easy of solution in all cases, yet there are many in which such trees might be dispensed with, and they are only tolerated in consequence of their "having been there a long time," and there seems an unwillingness to disturb, or rather destroy such old, useful servants; however, if it was taken into consideration how much injury they have done to small crops around them, it would be seen that the balance of merit does not lie so much on their side as might be expected, for very large trees are hurtful to crops for a considerable distance around them, and, however fine the Pears, Apples, or Cherries a tree may bear which requires a forty-round ladder to gather them, perhaps we may safely warrant that everything around them does not look well.

The shade of such trees is hurtful, as well as the greedy propensities of their roots; and we all know that in winter the shade from trees extends long distances; and however feeble it may be said the sun is at that time, its presence is necessary to the well-being of all vegetation, and I have known a good, useful wall of Peach-trees injured very much by the rearing of a quantity of high forest trees in front of them, not near, certainly, but not sufficiently removed to prevent their shading the Peach-wall in the dead months of winter; and, as it may be reasonably expected that a tree inside the garden must be more hurtful than those that are out, it follows that the fewer there are inside the better; in fact, there ought not to be any at all, for in most cases a little contrivance will enable the cultivator to do without such aids. Another site for a tree will present itself, or probably its uses were more imaginary than real, and it can be done without very well.

I have been led into the above remarks by seeing so many gardens encumbered with large standard fruit-trees, even in cases where I knew they had the same fruit in abundance elsewhere. Assuredly, healthy, useful vegetables are as necessary appendages to the dinner-table as the common fruits, and most gardens being in the neighbourhood of trees or plantations, sylvan scenery cannot afford much of an excuse for their being tolerated in a garden. On the other hand, a well-cropped garden is, of itself, an object of interest; for, apart from its utility, if everything be good that is grown there, then everything must be beautiful; for it is impossible to separate the two, whatever the admirers of wild scenery may say to the contrary; and as the kitchen-garden is avowedly a place of utility, that principle ought to be carried out in its management; certainly not without now and then introducing a something ornamental as well, but excluding all tall, wide-spreading trees, or anything else likely to mar the utility of things around them.

In the gardens of the humble cottager, I am aware that fruit-trees often abound in great profusion, but when they do so, good vegetables are rarely obtained. Nevertheless, I will make an exception in his case; for the limited space at his disposal compels him to make the most he can of the ground, and a large produce of the whole is to him of more consequence than any one thing remarkably good; besides which, he often has more time to expend in the under crops of his little plot than a more extensive cultivator will find profitable; hence he is able to have a bed of Onions under his Apple-tree, the bulbs being small, are, in a great measure, the results of his assiduous waterings, and probably with

manure-water too, with other things the same, so that I will not quarrel with him for endeavouring to obtain a bushel or two extra of fruit, for they are the most saleable portion of his produce, perhaps. But in all cases where really good vegetables are wanted, a healthy, open space must be selected, for it is only on such that we see the best produce sent to our Metropolitan markets; and if any doubt existed on the matter, it would easily be set at rest by visiting some of the large market-gardens around London, and then it would be seen that where the finest produce is seen, air and space is allowed it with a no stinting hand, so that it neither has to compete with a stouter neighbour for an existence, nor yet with one of its own species planted too close to it. Of the latter, I have, on former occasions, urged the necessity, and I now call attention to the large trees disfiguring and injuring so many gardens that would otherwise be good, and hope the present autumn will see some of them removed.

J. ROBSON.

NOTES FROM PARIS.—No. 3.

THE GARDEN OF PLANTS.

THIS celebrated establishment (*Le Jardin des Plantes*) is situated near the north-eastern extremity of Paris, and it is chiefly remarkable for its extensive museums of Natural History, and its collections of living animals imported from all parts of the world. It also contains a valuable Library and Herbarium, to which admission is granted every day, on presentation of a card, which may be had of the directors without any difficulty. The books in this library include all subjects relating to Botany, Natural History, Horticulture, Chemistry, Geology, and other sciences, printed, too, in French, English, German, and other languages. Every facility is afforded to students and others, who wish to read, or copy illustrations. There is an efficient staff of professors, who deliver a course of lectures twice a year, and to these lectures the public is admitted free. Indeed, everything is free in this establishment, as in many others here; such institutions being maintained entirely by the government. The professors in the departments of Botany, Natural History, and Horticulture, are M. Brogniart, and M. Decaisne, names already well known to many of your readers. There are six or seven more professors for other sciences, as Zoology, Mineralogy, Palaeontology (fossils), Geology, Chemistry, and Anatomy. There is also an evening class for Drawing during the winter months, the studies, of course, having reference chiefly to the accurate delineation of scientific subjects, including Anatomy in general.

The garden itself, especially as to the laying-out, offers but little requiring particular notice. Its principal features are three long and wide avenues of tall trees, one of Lime, another of Alder, and a third of Chestnuts. These avenues form an agreeable and shady promenade, during the warm months, to the numerous persons who come here every day for recreation or instruction. The ground at one side of the central avenue is flat, and laid out in formal beds and clumps filled with herbaceous plants, and on the other side is the strictly botanical department, carefully inclosed, and to which only students and others engaged in the profession are admitted, on presenting a card from one of the professors or directors.

This part of the ground is called the *Ecole de Botanique* (School of Botany), and it is open from six to nine in the morning, and from three to six in the evening. The plants are, of course, arranged according to the Natural System, and the beds are always kept very neat and clean. The labels (called *etiquettes*, in French) are of a particular colour, to indicate the properties and uses of the plants. Thus, *red* indicates that the plant is used in medicine; *green*, that it is used as food; *blue*, in arts and manufactures; *black*, that it is poison, &c., The name only is written on the label, and the colour of the latter indicates the properties of the plant. This plan, which I do not recollect having seen elsewhere, at least saves a little trouble in the writing of labels. A portion of the ornamental part of the garden

forms the Zoological department, and, as might be expected, where there are fine specimens of Hippopotamus and Orang-outang, is generally most frequented by the public.

Almost in every case, the lawns and clumps of shrubs and trees are enclosed with a sort of trelliss, about three feet high. This is obviously a wise precaution, under certain circumstances; but it debars people from the greatest charm of a pleasure-ground—a ramble on the green grass. Here, however, where the climate is dry and warm, and the people always in the open air, a smooth, green lawn is not so easily kept up as at Kensington, or Chiswick. For the most part, the ornamental trees have been much neglected in this garden, otherwise there would now have been some beautiful examples of choice evergreens; but they have been allowed to grow too close. The dread of cutting and thinning has been the ruin of many a promising plantation and many a valuable tree, as parental neglect has been the ruin of many a child.

There are, however, one or two trees here which deserve a passing notice; of these, the most remarkable is *Cedrus Lebani* (Cedar of Lebanon), planted by the founder of the Natural System, De Jussieu, in the year 1735, and truly he could not have had a more appropriate monument. This fine old tree is not much more than thirty feet high; but the branches spread out regularly all round, and their diameter may be about sixty-five feet. It is situated in the centre of one of the walks which lead to a mound commanding a good view of all Paris, as far as the eye can reach.

The next worth mention is *Paulownia imperialis*, about twenty-five feet high, and about eighteen feet in diameter, having a stem nearly eighteen inches through. This fine specimen flowers and fruits profusely every year. At present it is loaded with buds for next summer. This will give some of your readers in the north an idea of the climate here; and I may just add, on the same point, that *Cobaea scandens*, as well as several other "greenhouse plants" are almost always to be seen growing out-of-doors. *Cobaea scandens* here is as common on trellisses, railings, and walks, as the Virginian Creeper and the Honey-suckle are about London. With the exception of these two, and a *Magnolia grandiflora*, none of the ornamental trees in this garden are what they ought to be, when so favoured with respect to climate. But we must not forget that the political troubles of late years have been the main cause of the neglect which is observable in this as well as other public institutions in Paris; and, indeed, when the state of the national exchequer for some time subsequent to the year 1848 is taken into account, it must be obvious that nothing short of the most strenuous efforts on the part of the directors were required to save the Garden of Plants from ruin.

During the present year considerable alterations and improvements have been made in the Houses. Some of the old ones have been pulled down, and others constructed on the modern system in their place. One or two more are contemplated, and there is reason to believe that in a few years the fine collections of stove and greenhouse plants, at present starved and crowded, will be amply provided for. Of the houses lately erected, the most prominent is an Aquarium, about fifty feet long, and twenty-four feet wide from wall to wall; the roof is span-shaped, the sashes (of iron) being about ten inches apart. It is an excellent house, in point of light, and, therefore, very well adapted for the cultivation of water plants, of which it already contains a valuable collection. There is just walking room round the tank, and a narrow shelf for miscellaneous stove plants along the wall near the glass, a few Palms, Cycads, and similar kinds being placed on the floor at each end near the doors. I have not seen a better house of the kind anywhere in England, or on the Continent; for besides being large and light, it is constructed with much taste and durability. A fine plant of *Euryale ferox* has flowered frequently during the past season; the *Victoria regina*, of which there is a young healthy plant, has not yet flowered, nor is it likely to flower this year; for as yet its leaves are but little more than three feet in diameter. It will therefore, most probably, not show its blossoms before next spring. But flower when it may, it is certain to have a good run of visitors here. In company with the *Victoria* and *Euryale* are fine examples of the more common stove aquatics, and one or two of the

Nymphaeas are at present in flower, as *Nymphaea hybrida*, *gigantea*, *Stellata*, and *Ortgiesiano rubra*, (a slight variation from the true *rubra*). There are also some good plants of *Caladium bicolor*, *Pistia stratiotes*, &c. This house forms the central house of a range of three communicating with one another, the other two being a stove for miscellaneous plants, and an Orchid-house, each about the same size as the Aquarium.

The stove contains a good number of tropical Ferns, a few true Ferns, several *Zamias*, *Cycas revoluta*, *Seaforthia*, *Dicksonia*, and others of a like kind. There are, also, in the same house, good examples of *Margravia* and *Clusia rosea*, both rare and singularly pretty plants. The latter ranks with the *Mangosteen* and *Gamboge* tree, and though sometimes mentioned in trade catalogues is but seldom seen. The plant here is about six feet high, and though healthy, has been kept in a small pot for some time, and not encouraged to grow. The stem and leaves are dark green, the latter about six inches long, broad at the extremity, and tapering to the base. One flower appeared, just a few days ago, and I was fortunate enough to see it; for the flowers of the *Clusia* seldom last out the second day after opening. In this instance, the blossom might measure about five inches in diameter; the petals and sepals, slightly overlapping one another, are clear white, pellucid, and cucullate at the margin; somewhat thick, especially towards the centre, where they assume a delicate crimson tint. The stamens form a light green prominent button, about three-quarters of an inch broad; there are, therefore, three colours, green, crimson, and white, the latter, of course, predominating. The general outline of the flower, when well spread out, is very regular, and all the parts are beautifully arranged. Besides the beauty, in form and colour, for which the flower of *Clusia rosea* is distinguished, it emits a delicious odour, not very strong, to be sure, as in the case of the *Victoria*, but strong enough to be agreeable.

The *Margravia* is much more rare than the *Clusia*, and but little is known respecting this genus as to flowers and fruit; but as a curious and very ornamental stove plant it is worthy of every attention. Having a sub-climbing habit, it is grown here on an old stump of wood, and is very healthy. The plant of which I speak is about five feet high, and is distinguished for its singular habit and the fine lively green of its oval lanceolate leaves. Along with these is a healthy plant of *Napoleona*, also an ornamental plant of much interest, on account of its singular flowers and fruit, which, however, have been but very rarely seen.

The Orchid-house contains an extensive collection of healthy plants; but there is at present nothing in flower requiring particular mention.—P. F. KEIR.

THE EMIGRANT.

By the Authoress of "My Flowers."

(Continued from page 66.)

JOHN HENRY IN NEW SOUTH WALES.

SOME of John Henry's letters from the land of his banishment will, I am sure, be very interesting to those of my readers who may be thinking about emigration, or who have friends or relatives already settled in what may really be called the New World. Accounts from distant lands are seldom to be safely depended upon; but a man like John Henry, who fears the Lord, and walks in His continual presence, would not dare to speak what was not strictly and conscientiously true.

The first letter is written to the Rev. Mr. Johnston, for whom he appears to entertain the liveliest gratitude and love—and well he may; for no earthly tie, perhaps, can be more close than that which binds one who is brought out of darkness into light, to his spiritual father in Christ Jesus.

"G—, March 14th, 1850.

"Rev. and dear Sir,—I am now in New South Wales, after a voyage of sixteen weeks and four days, and am in perfect health at present,—thanks be to God for all His mercies to me. I hope, dear Sir, you and Mrs. J., and the children, are enjoying the same precious blessing. * * * I engaged as a labourer, to make myself generally useful, for

six months, at the rate of £15 a-year, with rations of twelve pounds of beef or mutton, ten pounds of flour, one-and-a-half pounds of sugar, and four ounces of tea, weekly. I like this place very well, and do not repent coming here. I am about four or five hundred miles from Sidney, about two miles from G—, a little village on the bank of the river. I am at a boiling-down establishment. There are several thousand cattle and sheep to be killed and boiled down here, just to get the tallow. There came 135 large cattle here to be killed this week. They are boiled by steam, and the beef thrown away in large heaps. My master has me often skimming fat. This is not weighty work; but a person is dirtied with tallow. * * * Our master, Mr. —, came to us since I commenced to write, and says, if we have good conduct and do well, he will add thirty shillings to our wages: he is a fine man, and a magistrate. I believe there is a minister who preaches in G—, one day on this side the river, and another on the far side. It has happened so, that I did not see nor hear him yet. Sunday first is his day on our side the river, and we hope to go to hear him. Dear Sir, I do not intend to stop here long: there are but very few white men, and they are generally of a very bad character. The black people are very plenty; they are generally naked: they robbed some huts. There is no labour done here. The provisions must all come up from Sidney. * * *

"P.S.—I humbly thank you for all your kindness to me ever since I became acquainted with you. I shall never forget you. I have thought very much on you and Mrs. J. during the tedious voyage. The Lord was very good to me in giving me an upper berth in the vessel, just at a little window, so that I had a good opportunity of reading my Bible, and avoiding bad companions."

Another, addressed to his grandmother, contains the following passages:—

"Dear Grandmother,—As you have heard that I arrived here safe, I hope you will not fret about me. Although I am in a distant land, yet the Lord has not forsaken me. He is in this land as well as at home, and He is also on the mighty waters. You know His word to the believer is, 'I will never leave thee nor forsake thee.' He was as parents to me. He says, 'I will be a father to you;' and this was my comfort during the voyage. When I considered, and saw that I had no relatives with me in the ship, nor any before me in the colony, my spirits were ready to sink; but the Bible comforted me, and I had no reason to be cast down. Those who were near me, or with me in the vessel, were very kind to me, and ready to minister to my wants. This was all the goodness of God. I hope to return home in a few years; and, perhaps, I will yet see you, and tell you more about this colony: but should we not have the privilege of seeing each other on earth, let each of us be prepared to meet in heaven. Dear grandmother, we will lean on Jesus. He will not forsake us. His blood is sufficient to cleanse us from all sin. Time is short, and life uncertain; so we cannot trust to anything here. God is the stay of old age. I pray God to preserve you to your latter end; and, when it is His blessed will, take you to dwell in heaven above."

To his brother:—

"My work is at a boiling-down establishment. The business is carried on day and night—Sunday as well as Saturday. I have not wrought on Sunday yet, nor do I ever intend to do so, though our superintendent wanted me several times; but I refused, and told him I would not work on Sunday, nor never did. He was very angry, and swore at me, that I should not be so religious; that if I refused to work on the Sabbath, I would only be laughed at."

A perfect amount of irreligion and worldliness prevails where Sabbath ordinances and privileges are possessed; but where they are not to be found, how Satan triumphs! Soon, the very Sabbath rest is neglected and forgotten, and a very distinguishing mark of God's covenant with man blotted out. The sin brings speedy punishment; for it is a decree of the Most High God, that neither man or beast can live without such portions of rest as He has appointed; and, therefore, disease and death stalk grimly beside Sabbath-breaking. How terrible it is, when Christians,—not nominal, but *real* ones,—are led to stray into devious paths; and, for the sake of worldly good, stand in the way of sinners! The command, to "trust in the Lord," is so frequent, so solemn,

and so powerfully expressed in the Word of God, that true believers, it would seem, *never could* disregard it. They might, through the infirmity of the flesh, "cry, yea roar," to the Lord, for help and deliverance, while their spirits fainted within them; but to go deliberately, and of one's own accord, into the midst of Satan's haunts, where abstinence from every religious and spiritual privilege is compulsory, and where there may be said to be "No God," is such a fatal and backsliding step, that it makes the heart tremble. It points so plainly to unbelief, that it startles and astounds us; as if He, whom we trust for spiritual support in a land of spiritual drought and famine, could not as easily support our bodies and supply our wants in the land where His hand has planted us! Almost every other spot where England rules is blest with the means of grace; but poor John Henry sought his maintenance where there was no "brook in the way," and we shall now find that his devout and devoted heart found out its mistake, and fainted within him.

Readers! this is a wholesome, profitable lesson to us. Let us improve by it. Let those who are trying and seeking to walk with God, examine themselves closely in every circumstance of their lives, yea, in every incident; and never let go outward privileges for any earthly gain. They are not Christ, it is true; but they are helps and undergirders; and being commanded, enjoined, and supplied by His Word and grace, we cannot undervalue or resign them, without guilt and grief, and fatal damage to our immortal souls.

NOSEGAYS.

TIT for Tat.—The plan adopted by your excellent correspondent, "S. P., *Rushmere*," for making that pyramidal nosegay for the wedding table, page 69, is quite new, at least, it is so to me, and, if I am not mistaken, it is perfectly original. As every new plan or invention is so much additional power, and may lead to farther improvement and ingenuity, we should very much like to hear how the principal wedding nosegays for the last six months *were made*; not the kind of flowers which were put together, for they are of less consequence than *the way* they were fastened and held together. The damp moss was an excellent idea; and once the moss was secured in the proper form to the handle, sticking in the flowers like pins into a pin-cushion, was the best and most practical plan; at this late season of the year flowers keep a long time in damp moss, and much better than in water, or even in damp sand; it should be live moss, however, to get the full benefit of it. On the principle that one good turn deserves another, I shall give another way of making a pyramidal nosegay for a select party; but I am not a professed nosegay-maker myself, I only know how some kinds of them are made. I called at a place the other day "promiscuously," and I heard that a bishop and other dignitaries were to lunch at the house on the morrow; this place has been noted for good flowers, and better taste; the party, or most of them, were known to be fond of flowers, and good critics on their arrangement. The credit of the place being thus likely to be brought to the proof, a good nosegay for the luncheon-table was proposed, and I had the good luck of seeing it finished, and put by in a cool room; but I hardly put a hand to it myself, I merely gathered some of the flowers, suggested the form and mode of manufacture—the ladies did the rest; they said it was the first of the kind they had done, and I shall not be far out if I say that a better table nosegay was not made so near to London this season. All that I shall say about the flowers is, that as this fine nosegay was to be seen by daylight, no colour could come amiss to it; but we must bear in mind that deep blue and deep purple flowers look black by candlelight, and every shade of violet and purple is lost in the same way, and, therefore, for evening parties, such as scarlets, crimsons, white, yellow, and orange, with rose, rosy-pink, and reddish-purple, should be exclusively made use of.

The first thing is to have a right kind of stand for the nosegay; the one in hand had a silver stand, but a brown jar would do if one likes it, and a soup plate that would fit on the top of the jar would do to stand the nosegay on. Now, if one had already a gold, or silver, or china-ware,

or any ware stand, for the centre of the table, all that is wanting is a *soup-plate*-shaped dish to suit the stand, and one made of pewter is the best, but one of zinc would be nearly as good, as the company cannot see it; this plate may be from six inches to two feet across; it is to be filled quite full to the very edges with damp sand, and the sand is to be made up in the centre as high as the diameter will allow of; it is then in the shape of a sugar-loaf, and the sand being quite damp it will hold this form for ever so long, and you can water it just like the moss one. The bottom fringe is then the first part to begin with, and of all flowers, *Fuchsias* make the best fringe; take one kind, or three kinds, for the whole fringe; take the foot-stalks with the flowers, stick the end of the stalks into the sand, all round the edge of the plate, and let the flowers hang down in their natural way,—a white one with a crimson inside, then a reflexed scarlet, with a purple inside, and the third, a plain red one, like *gracilis*, make a charming fringe, if the flowers stand exactly at equal distances below the edge of the plate, and one flower touch another, and no more, all round; then, for a bottom row, take white *Roses*, for instance; the next row *Scarlet Geraniums*; higher up, a white and a yellow flower alternately in the row, and so on to the top; but any arrangement of the flowers which pleases oneself will do, once the system is understood; but *Fuchsias* make the best fringe, and the flowers of the *Scarlet Runner Bean* the next best. For a wedding nosegay, use as many white flowers as you can get, and some *Orange-flowers*, of course. The common white and crimson *China Roses*, in buds half open, and in circular rows, or mixed with a few leaves, make a nice bouquet at this season; if the outside petals are wild with damp, strip them off, and if they are hard and close, hold the bottom between the thumb and forefinger of the left hand, and with the forefinger of the right hand press down the point of the bud, and that will open it sufficiently for the work in hand. For a nosegay for the Christmas dinner-table, use little branches of *Holly*, with the berries, and put in sufficient leaves to hide the sand; you might fringe it round the bottom with *Laurestinus* flowers, and yellow-berried *Holly* would be a greater contrast. I have seen beautiful nosegays all of *Fuchsia* branches, from six inches to eighteen inches long, rising all round, and spreading outwards from a cover of sand, not more than four inches high, and six inches across the plate, with leaves enough put into the sand to hide it from view. For the dinner of the Caledonian Society, endeavour to imitate the Highland tartans, by putting the flowers in rows and squares;—all manner of devices may be made with flowers on this plan, close on the surface, by flowers only, or branchy, in imitation of plants, with slender branches in bloom. Most of the large bouquets for the royal table, and for the tables of our high nobility are made on this principle; damp sand pressed hard together being the only foundation; but the sand must always be out of sight with leaves, if the flowers do not cover it. Large nosegays for the hand, and as flat on the top as the crown of a hat, are just as easily made when one knows the way; but, first of all, let us hear of the exact attempts that have been made, and failed, or succeeded but partially, and with a good deal of trouble, before we return to the subject again.

D. BEATON.

MANGOLD WURTZEL AS POULTRY FOOD.

As Mangold Wurtzel is now abundant, I am desirous of directing the attention of poultry keepers to its use as food for fowls, as I have found it a cheap and much-relished variation in the poultry dietary, and one that is prepared with very little trouble.

The Mangolds should be taken up without much cutting or trimming, which would permit the escape of the sweet, nutritious juice, and boiled or steamed until soft throughout, which may be readily ascertained by thrusting a fork into them. In this state, they are easily cut or crushed up, and may be readily mixed with meal or middlings, and the whole reduced to a proper consistence by the addition of enough boiling water to scald the meal.

As thus prepared, Mangold is very highly appreciated by fowls, in fact, they eat it most greedily, evidently preferring it to any other cooked vegetable, except, perhaps, parsnips.

During summer, the thinnings-out, and those Mangolds that show any disposition to run to seed, may be advantageously employed in this way, and they will be found to furnish a large supply of valuable, nutritious, and wholesome food at small expense. If the boiling or stewing the Mangolds is regarded as too much trouble, they may be baked until soft in a side oven, and then cut up and mixed with the baked or scalded middlings.

Some persons have tried Mangold in a raw state, but there is much trouble in cutting it up into pieces sufficiently small to be eaten, and it is not much relished in this state.

W. B. TEGETMEIER.

GROWING VINES IN POTS.

BEFORE a man can lay claim to the title of a good gardener, he must necessarily see a variety of soils, as well as climates, in each of which he will find opportunities for the display of judgment and tact. The more of the latter qualities he possesses, the sooner may he expect to find himself comfortably settled in a good place (for to those who possess no influence in high quarters, but have to work their way up by their own exertion, this is no very easy matter), therefore, let none who aspire to a place amongst "the best gardeners of the day," neglect Mr. Appleby's maxims, under the head, "Young Gardeners." In the second and third-rate places, through which the young gardener has in general to wend his way, he will often be called upon to invent what he may call make-shifts, and to resort to make-shift practices, in order to meet the requirements of the family he serves. Having prefaced my remarks so far, I will proceed to describe what I call a make-shift method of growing Vines in pots, but which, nevertheless, have with me (when living in Essex) quite equalled many crops I have seen on Vines raised from eyes on the recognized scientific principle.

Now, the raising of Vines from eyes, for fruiting in pots, requires not only a large extent of pit, or house-room, but much care and attention, in order to get them to break strongly and grow on without check. The plan I am going to describe is, however, very simple, and requires but little attention to grow the canes fit for forcing; after forcing commences they require the same care as others raised from eyes. I had some strong Vines of the *Royal Muscadine* growing against a south wall, and trained on the long rod system, where, as the soil was dry, and climate good, they ripened their wood pretty well. My practice was to nail in, at the summer prunings, in addition to those rods wanted for furnishing the wall, a quantity of strong shoots that sprung from the bottom of the Vine, for layering in November or December, in well-drained 13-inch pots (larger may be used with advantage, if room can be afforded them when brought in for forcing), plunged a little over the rim of the pot, around the Vine, keeping them as near the wall as possible. The shoots were then brought down, after being tongued, as is practised with other things—Carnations, for instance. When firmly pegged down, three or four inches below the level of the soil in the pot, and then cut off at the eye above the soil, in the following summer, all the young shoots, except the strongest one, from each pot, were pulled away, and as that one grew it was tied to a stake firmly fixed in the soil, outside the pot; a plentiful supply of water was given in dry weather, and when the cane had reached the height of eight or nine feet it was stopped, which tended to strengthen the plant. In July or early in August, if possible, when the weather was dull or showery, a knife was passed half through the shoot, between the parent stem and the pot, and two or three weeks later was finally severed. The pots were then removed for a week to a west or east aspect, lest the Vines should droop from the loss of support from the parent, which they are likely to do if left exposed to the sun under a south wall; but by the end of a week or ten days they may be returned, and be nailed as close as possible to the wall, and water very gradually withheld, where they will elaborate their juices and early go to rest. They may then be pruned back to any desired length, and the pots laid on their sides, and be kept dry and free from frost until introduced to the forcing-house, after which they may be treated according to the instructions given in any publication on forcing Vines in pots. I

used to force them at the back of a fruiting Pine-house, setting them *on the tan* when first introduced, and bending the canes down until the buds broke; they were then plunged in the tan, and watered more freely. By this means I have had from five to nine good bunches of Grapes on each Vine ripe in March and April. The soil used was good old turf, enriched with deer dung, a little charcoal and broken bones, good drainage, and occasionally liquid manure.—H. HOWLETT, *Haverland*.

RIPENING THE WOOD OF YOUNG FRUIT-TREES.

I WAS once under the necessity of planting a quantity of Peach and Nectarine trees from a nursery where the soil was very strong and wet, consequently, the trees were like so many Willows. Had I left them alone until November or February, and then transplanted them without the previous preparation, they would, most likely, in the following summer, have produced a quantity of curled and blistered leaves and shoots—a prey to insects and mildew; but seeing what they were early in September, I got the nurseryman to lend me a man, and after selecting my trees, I let the man open a trench round each tree, at the same time cutting most of the strong roots; this arrested their rampant growth, and by the end of October, when I transplanted them, whilst their leaves were still upon them, they began to show signs of nice brown and firm wood, and, finally, by the time the weather became severe, I had wood almost as hard and brown as a nut-shell. The consequence was, firstly, getting the wood ripe, by a timely check to rampant growth; and, secondly, early planting, and whilst the trees still retained their foliage; consequently, active energies. The roots took hold of the new soil before winter, and in the following spring the trees broke into vigorous and healthy growth, and have, I doubt not, continued to do so; though I cannot personally speak to it, as I left them to other hands.

It is now too late in the season to adopt the first course in a case of the kind; but much may be done by planting immediately, whilst the trees are still full of foliage, and, indeed, not with Peaches and Nectarines alone, but with most deciduous as well as evergreen trees, up to the Oak. I believe, with Mr. Robson, that it is good practice to *plant before the leaf falls*.—H. HOWLETT.

THE WRINGTON AND BURREINGTON POULTRY SHOW.

PERHAPS few if any Poultry Exhibition in the kingdom can boast of so spirited, liberal, or energetic support, as the one of which we are now speaking. The aristocracy of the county of Somerset not only universally patronising the Exhibition (as forming part of an agricultural one), but presenting very liberal premiums for general competition. It was held on Wednesday, October 25, at Redhill, and the day was most certainly as truly unpropitious as any on record; the rain fell from morning to nightfall fearfully, and in torrents, never abating in the least, and giving a desponding character to the whole proceeding. A reference to the list of the prizes awarded, however, will best attest the fact, that some of the most celebrated breeders contested, and that birds of long-reputed character, as to prize-taking, here vied with each other.

Every effort of the acting committee was used that the exigencies of the case suggested to prevent injury to the imprisoned poultry; bags were hung before the pens to keep out the driving rain, but proved only very partially successful, though never removed till Mr. Edward Hewitt, of Sparkbrook, Birmingham (who officiated as the judge), entered the field to make the awards. These frequently-occurring "mishaps" prove, most fully, how desirable it is to have both visitors and poultry well secured from the inclemencies of our variable climate, and, no doubt, poultry committees will find their *own interests* best secured by careful attention to this rather too-commonly-neglected appointment. On the present occasion, even access to the

field was almost impossible, from the combined results of heavy traffic and fast-falling rain.

The *Game* classes were very good, all the prizes falling to the well-known breeder, J. R. Rodbard, Esq., of Aldwick Court. The *Spanish* prizes were monopolised by fowls from the yard of Mr. William Plummer, of Bristol; the cockerel and one pullet being very superior birds, but the second pullet somewhat inferior. The Buff *Cochins* presented many very excellent specimens, but some otherwise first-rate birds lost position from the introduction of "waived combs," an objectionable feature, from which every exhibitor should be *carefully* guarded. The prize *Partridge Cochins*, belonging to the Rev. Granville Hodson, of Banwell, well maintained that gentleman's high repute in this really beautiful, though too-neglected variety; these were a well-matched, even pen of fowls, perfect in colour, and obtained the most coveted premium, viz., the Society's Silver Medal for the most perfect pen of poultry exhibited. The *Dorkings*, for an agricultural district, were indifferent. The prize for *Polands* was secured by a good pen of White ones, the property of T. Brackenbridge, Esq., of Chew Magna. In the *Hamburgh* classes (all varieties competing), the premium was given to a very promising pen of *Golden-pencilled* chicken, belonging to Chas. Edwards, Esq., of Brislington, who also secured the prize for *Turkeys*, with a most excellent male bird, but the hens were comparatively deficient. *Geese* did not show very numerously, nor was their quality superior. The *Aylesbury Ducks* were exceedingly good, as were the *Labradors*; consequently, independent of the winning birds, several lots were commended. It will be seen that a "sweepstakes," independent entirely of the general premiums, had to be awarded; it consequently sometimes occurred that the first-prize birds (not competing) received an inferior amount of prize money to others that they, in general competition, had *defeated*. The policy of this arrangement, therefore, appears somewhat questionable; while, doubtless, the awards would be more generally satisfactory if the *combined* prizes were competed for by *all* exhibitors. Past experience, no doubt, will suggest future improvements in the general arrangements, and, most probably, before another meeting, some plan will be adopted, by which common shelter will be secured to both visitors and poultry, as the committee are proverbial alike for their extended liberality and determination to overcome every obstacle that may present itself, in the way of their success.

Class 1.—*GAME*.—136. First prize, J. R. Rodbard, Esq., Aldwick Court, Bristol. *Sweepstakes*.—137. J. R. Rodbard, Esq.

Class 2.—*SPANISH*.—140. First prize, Mr. Wm. Plummer, Brislington, Bristol. *Sweepstakes*.—140. First Mr. Wm. Plummer, Brislington, Bristol.

Class 3.—*BUFF COCHINS*.—152. First prize, Rev. Granville Hodson, Banwell. *Commended*.—148. Rev. T. Mathew, Chelvey. 154. T. L. Bean, Esq., Ashcoat. *Sweepstakes*.—152. Rev. Granville Hodson, Banwell. *Commended*.—148. Rev. T. Mathew, Chelvey. 154. T. L. Bean, Esq., Ashcoat.

Class 4.—*PARTRIDGE COCHINS*.—156. First prize, Rev. G. F. Hodson, Banwell. *Sweepstakes*.—156. Rev. G. F. Hodson, Banwell.

Class 5.—*DORKINGS*.—157. First prize, Miss Wilcox, Nailsea. *Sweepstakes*.—161. J. R. Rodbard, Esq., Aldwick Court.

Class 6.—*POLANDS*.—164. First prize, T. Brackenbridge, Esq., Chew Magna. *Sweepstakes*.—No entries.

Class 7.—*HAMBURGERS*.—168. First prize, Chas. Edwards, Esq., Brislington, Bristol. *Sweepstakes*.—No entries.

Class 8.—*CROSS BREEDS*.—171. First prize, Rev. Robert Baker, Compton Martin. *Sweepstakes*.—171. Rev. Robert Baker, Compton Martin.

Class 9.—*TURKEYS*.—175. First prize, Chas. Edwards, Esq., Brislington, Bristol. *Sweepstakes*.—176. J. R. Rodbard, Esq., Aldwick Court.

Class 10.—*GESE*.—179. First prize, Mr. Jas. Keel, Redhill, Wrington, Somerset. *Sweepstakes*.—No entries.

Class 11.—*AYLESBURY DUCKS*.—183. First prize, J. R. Rodbard Esq., Aldwick Court. *Commended*.—184. Miss Wilcox, Nailsea. *Sweepstakes*.—188. Chas. Edwards, Esq., Brislington.

Class 12.—*ANY OTHER VARIETY OF DUCKS*.—195. First prize, T. Brackenbridge, Esq., Chew Magna. *Commended*.—192. Rev. W. Woodhouse, Worle, Weston-super-Mare. (Labradors.) 193. Chas. Edwards, Esq., Brislington. (Labradors.) *Sweepstakes*.—No entries.

THE SOCIETY'S SILVER MEDAL FOR BEST PEN OF POULTRY OF ANY KIND.—156. Rev. Granville Hodson, Banwell. (Partridge Cochins.)

BEDFORDSHIRE POULTRY EXHIBITION.

THIS, the second Bedfordshire annual Exhibition, was held in the Corn Exchange at Bedford, on October 31st and two following days. There were about 220 pens of various kinds, and our reporter informs us that it was, on the whole, the best small show he ever attended, and that it was both well and spiritedly conducted.

Judge:—James Henry Catling, Esq., London.

Class 1.—SPANISH.—Cock and two Hens.—6. First prize, Edward H. Strange, Amptill, Beds. Age, eighteen months. 2. Second prize, C. T. Nelson, The Lozells, near Birmingham. Age, cock sixteen months, hens sixteen months and two years. *Commended*.—1. John Tindall, jun., Ewerby, near Sleaford, Lincolnshire. Age, eighteen months. (Fair, but the old birds not in very good condition.)

Class 2.—DORKING (White).—Cock and two Hens.—No entry.

Class 3.—DORKING (Coloured).—Cock and two Hens.—13. First prize, Sir Williamson Booth, Bart., Woodbury Hall, Potton. Age, six months, two days. 3. Second prize, Rev. Frederick Thursby, Abington, near Northampton. Age, above one year. *Highly Commended*.—11. Sir Williamson Booth, Bart., Woodbury Hall, Potton. Age, eighteen months. 12. Sir Williamson Booth, Bart., Woodbury Hall, Potton. Age, fifteen months. *Commended*.—5. Thomas James, Wilshamstead, Beds. Age, about two years. 15. Miss E. Steele Perkins, Sutton Coldfield, near Birmingham. Age, not known. 17. Miss E. Steele Perkins, Sutton Coldfield, near Birmingham. Age, about eight months. (Young birds in splendid condition. The state of the plumage of some of the old birds told much against them. A good class.)

Class 4.—COCHIN-CHINA (Cinnamon and Buff).—Cock and two Hens.—14. First prize, Thomas McCann, Graham House, Malvern. Age, eight-and-a-half months. 8. Second prize, Miss Harriet Emery, Kempston Hardwick, Beds. Age, cock fifteen months, one hen thirteen months, one hen unknown. *Commended*.—6. Richard Marsh, Lodge Farm, King's Walden, Herts. Age, seven months. 10. Miss Harriet Emery, Kempston Hardwick, Beds. Age, thirteen months.

Class 5.—COCHIN-CHINA (Brown or Partridge-feathered).—Cock and two Hens.—Prize withheld.

Class 6.—COCHIN-CHINA (White).—Cock and two Hens.—2. First prize, John Margesson, Aylesbury, Bucks. Age, twenty-three weeks. No second prize awarded. (Not a good lot.)

Class 7.—BRAMAH POOTRA.—Cock and two Hens.—9. First prize, William Henry Green, Aylesbury, Bucks. Age, seven months. 7. Second prize, G. C. Adkins, West House, Edgbaston, Birmingham. Age, eight months. *Highly Commended*.—8. John Tindall, jun., Ewerby, near Sleaford, Lincolnshire. Age, about six months. *Commended*.—3. Rev. Frederic Thursby, Abington, near Northampton. Age, seven months. (Good. Some birds of beautiful colour and quality.)

Class 8.—MALAY.—Cock and two Hens.—1. First prize, George W. Boothby, Louth, Lincolnshire. 2. Second prize, Thomas Sheen, Aylesbury. Age various. (All bad condition.)

Class 9.—GAME (Black-breasted and other).—Cock and two Hens.—1. First prize, Theed W. Pearce, Bromham-road, Bedford. Age, cock full age, pullets hatched 1854. 19. First prize, William Kingston, Bedford. Age, seven months. 13. Second prize, E. Farmer, Greet, Spark Brook, near Birmingham. Age, two years. 17. Second prize, Francis Alfred Lavender, Biddenham, Beds. Age, six months. *Highly Commended*.—2. Theed W. Pearce, Bromham-road, Bedford. Age, cock full age, pullets hatched 1854. 12. E. Farmer, Greet, Spark Brook, near Birmingham. Age, five months. *Commended*.—9. Edward H. Strange, Amptill, Beds. Age, eighteen months. 16. Theed W. Pearce, Bromham-road, Bedford. Age, about seven months. 18. James Howard, Bedford. Age, various. Duplicate prizes were awarded in this class on account of the very superior quality of the birds. (The best Game class we ever saw; so good, it was a hard matter to decide.)

Class 10.—GAME (White and Piles).—Cock and two Hens.—3. First prize, Edward H. Strange, Amptill, Beds. Age, six months. 2. Second prize, John Mead, Aylesbury, Bucks. Age, six months.

Class 11.—GAME (Other varieties).—Cock and two Hens.—1. First prize, Theed W. Pearce, Bromham-road, Bedford. Age, various. 4. Second prize, William Henry Green, Aylesbury, Bucks. Age, seven months. *Highly Commended*.—5. Ed. Farmer, Greet, Spark Brook, near Birmingham. Age, eighteen months. 6. Edward H. Strange, Amptill, Beds. Age, seventeen months. *Commended*.—7. William Kingston, Bedford. Age, seven months.

Class 12.—POLAND (Golden).—Cock and two Hens.—4. First prize, Edward H. Strange, Amptill, Beds. Age, cock two-and-a-half years, hens eighteen months. 3. Second prize, George W. Boothby, Louth, Lincolnshire. *Highly Commended*.—6. Edward H. Strange, Amptill, Beds. Age, six months.

Class 13.—POLAND (Silver).—Cock and two Hens.—2. First prize, G. C. Adkins, West House, Edgbaston, Birmingham. Age, not known. 4. Second prize, Edward H. Strange, Amptill, Beds. Age, about five-and-a-half months. *Commended*.—1. George W. Boothby, Louth, Lincolnshire. (Good.)

Class 14.—POLAND (Any other variety or colour).—Cock and two Hens.—7. First prize, Edward H. Strange, Amptill, Beds. Age, eighteen months. 5. Second prize, G. C. Adkins, West House, Edgbaston, Birmingham. Age, not known. *Highly Commended*.—3. George W. Boothby, Louth, Lincolnshire.

Class 15.—HAMBURG (Golden-pencilled).—Cock and two Hens.—2. First prize, W. Taylor, Amptill, Beds. Age, hatched 1854. 8. Second prize, Frederick Welstead, The Cottage, Stouely, Kimbolton. Age, hatched 1854. *Highly Commended*.—1. George Roberts, Amptill,

Beds. Age, hatched 1854. *Commended*.—3. G. De Fraine, Walton-street, Aylesbury. Age, not known. 4. Charles Richard Titterton, Snow Hill, Birmingham. Age, cock six months, pullets five months. 9. James Howard, Bedford. Age, various. 10. James Howard, Bedford. Age, eighteen months. 11. Edward H. Strange, Amptill, Beds. Age, seventeen months. (Capital. Not a bad pen.)

Class 16.—HAMBURG (Silver-pencilled).—Cock and two Hens.—7. First prize, John Emery Kempston, Hardwick, Beds. Age, eighteen months. 10. Second prize, Mrs. Harvey, Ickwell Bury, Biggleswade, Beds. Age, cockerel one year, pullets five-and-a-half months. *Highly Commended*.—3. John Morris, jun., Amptill, Beds. Age, eight months. *Commended*.—6. Mrs. C. C. Hale, The Bury, King's Walden, Herts. Age, six months. 9. Mrs. Harvey, Ickwell Bury, Biggleswade, Beds. Age, about one year. 11. Francis A. Lavender, Biddenham, Beds. Age, one year. 12. James Howard, Bedford. Age, various. 13. James Howard, Bedford. Age, various. (Very good indeed.)

Class 17.—HAMBURG (Golden-spangled).—Cock and two Hens.—1. First prize, Henry Ellis, Turvey, Beds. Age, seventeen months. 2. Second prize, Edward H. Strange, Amptill, Beds. Age, six months.

Class 18.—HAMBURG (Silver-spangled).—Cock and two Hens.—5. First prize, Thomas McCann, Graham House, Malvern. 2. Second prize, Edward H. Strange, Amptill, Beds. Age, six months. *Commended*.—1. Matthew Leno, jun., Hemel Hempstead, Herts. Age, about seven months. (Good.)

Class 19.—BANTAMS (Gold-laced).—Cock and two Hens.—5. First prize, Matthew Leno, jun., Hemel Hempstead, Herts. Age, seven months. 4. Second prize, George W. Boothby, Louth, Lincolnshire.

Class 20.—BANTAMS (Silver-laced).—Cock and two Hens.—3. First prize, Matthew Leno, jun., Hemel Hempstead, Herts. Age, seven months. 2. Second prize, George W. Boothby, Louth, Lincolnshire.

Class 21.—BANTAMS (Black).—Cock and two Hens.—1. Second prize, Henry Churchill, Gloucester. Age, unknown. No first prize awarded in this class.

Class 22.—BANTAMS (White).—Cock and two Hens.—1. First prize, G. C. Adkins, West House, Edgbaston, Birmingham. Age, not known.

Class 23.—BANTAMS (Any other variety of colour).—Cock and two Hens.—1. First prize, G. C. Adkins, West House, Edgbaston, Birmingham. Age, not known. 3. Second prize, Francis A. Lavender, Biddenham, Beds. Age, one year.

Class 24.—FOR ANY OTHER DISTINCT BREED OF POULTRY.—Cock and two Hens.—2. First prize, C. T. Nelson, The Lozells, near Birmingham. Age, two-and-a-half years. 3. Second prize, George W. Boothby, Louth, Lincolnshire. (Ptarmigan.) *Commended*.—4. George W. Boothby, Louth, Lincolnshire. (Silky.) 10. Mrs. Harvey, Ickwell Bury, Biggleswade, Beds. (Silk Fowls.) Age, sixteen weeks.

Class 25.—MIXED BREEDS (The cross to be stated).—Cock and two Hens.—3. First prize, Rev. Roger Smith, Arlsey, near Baldock. (Dorking and Cochinchina.) Age, seven months. 4. Second prize, Sir Williamson Booth, Bart., Woodbury Hall, Potton, Beds. (Dorking and Cochinchina.) Age, five months. *Highly Commended*.—3. George Hine, jun., Oakley, Beds. (Dorking, Cochinchina, and Game.) Age, one year.

Class 26.—DUCKS (White Aylesbury).—Drake and two Ducks.—3. First prize, William Henry Green, Aylesbury, Bucks. Age, seven months. 1. Second prize, Theed W. Pearce, Bromham-road, Bedford. Age, five months. *Highly Commended*.—4. William Henry Green, Aylesbury, Bucks. Age, seven months.

Class 27.—DUCKS (Rouen).—Drake and two Ducks.—4. First prize, John Emery, Kempston Hardwick, Beds. Age, unknown. 1. Second prize, Theed W. Pearce, Bromham-road, Bedford. Age, ducks seven months, drake uncertain. *Highly Commended*.—2. Thomas James, Wilshamstead, Beds. Age, about eighteen months. *Commended*.—3. Henry Pearce, jun., Bedford. Age, about six months. 5. George Allen, Amptill, Beds. Age, sixteen months. 6. Theed W. Pearce, Bromham-road, Bedford. Age, various. (All first-rate.)

Class 28.—DUCKS (Any other variety).—Drake and two Ducks. 2. First prize, Rev. Frederic Thursby, Abington, near Northampton. Age, five months. 3. Second prize, Frederic Street, Harrowden, Beds. Age, about five months. *Highly Commended*.—6. Richard Emery, Kempston Hardwick, Beds. (Mandarin Ducks.) Age, about twenty months. 7. Richard Emery, Kempston Hardwick, Beds. (Summer Ducks.) Age, about twenty months. *Commended*.—8. Miss E. Steele Perkins, Sutton Coldfield, near Birmingham. (Bucnos Ayres Ducks.) Age, unknown.

Class 29.—GESE.—Gander and two Geese.—2. First prize, W. H. Denison, Woburn, Beds. Age, seventeen months. 3. Second prize, Mrs. Harvey, Ickwell Bury, Biggleswade, Beds. Age, between two and three years. *Highly Commended*.—1. Frederic Day, Hemel Hempstead, Herts. Age, nineteen months.

Class 30.—TURKEYS.—Turkey Cock and two Hens. 5. First prize, Abel Redrup, Great Kimble, Bucks. Age, five months. 2. Second prize, W. H. Denison, Woburn, Beds. Age, six months. *Commended*.—1. Josh. C. Davies, Arlsey, near Baldock, Herts. Age, eighteen weeks. 3. Mrs. E. Fowler, Caldecote, Biggleswade, Beds. Age, six months.

Class 31.—FATTEN FOWLS.—1. First prize, Miss E. Steele Perkins, Sutton Coldfield, near Birmingham. Age, about nineteen weeks. 2. Second prize, Rev. G. A. Burnaby, Bedford. Hatched 1854.

Class 32.—EXTRA STOCK.—*Commended*.—2. Francis A. Lavender, Biddenham, Beds. (Two Rouen Drakes.) Age, one year. 9. F. A. Lavender (Pair of Guinea Fowls.) Age, one year. 13. Rev. J. C. Campion, Westoning. (Dorkings.) Age, six months. 14. Rev. J. C. Campion, Westoning. (Dorkings.) Age, six months.

QUERIES AND ANSWERS.

GARDENING.

FUMIGATING PLANTS WITH TOBACCO.

"Sometime ago I used to get a gardener to come and smoke my greenhouse for me, and for information, I used to assist him in the operation of having a round iron box made with a hole in the side, near the bottom, for the bellows, which was puffed away by me, while the other damped with water the tobacco and moss on the top, until the house was so full of smoke, that we could stay in it no longer, and I used to be dreadfully ill after the operation (in fact, dead drunk). My helpmate in this affair has now left it to me, and I dreaded the idea of this manner of doing things; and while out on a tour, last May, I met with a nurseryman, in a large way of business, who said he used tobacco-paper and cayenne pepper, which he said destroyed the aphides completely, but that two or three successive nights moderately was better than overdoing it. I have no means of seeing him again, to ask him if he ever met with accidents, but I know this, that I tried it with some paper I purchased, and it fetched the leaves wofully off my Fuchsias last August, but for me, fortunately, I had a good stock to supply their place. This, also, scorched my Melons, that they *never recovered*, and one or two other plants were injured; of course, all must have suffered from this overdoing of it. Now comes aphides again, and this week I have determined to be more cautious about cooling the smoke, and for this purpose I had some touchwood, half-burnt, covered with the tobacco-paper slightly damped, and over the top I placed three or four iron rods with damp moss on, to cool the smoke, as I thought, as it came up. Somehow or other, however, the Ferns in my *Oncidium* basket are scorched beyond reason, and I saw that the smoke drifted that way in the same manner or place that the Melons suffered in August, and to add to my present loss, six or seven nice Cinerarias were on the shelf, just above the smoke box (The Cinerarias leaves were wet, would it be worse on this account? [Yes]), and their leaves next day were quite brown, and I have turned them back into a cold frame, and to-day they are curled up and unfit to be seen.

"I am an amateur, and the whole work is done by myself, after my hours of business. I have a lean-to house, with four lights four feet each, and a walk in, six feet high, with flat stage, and I keep a successional lot of flowers all the year (much thanks to your columns, among others, for information). It is in the walk inside that I put this smoke-box, and I cannot help it coming in contact with the plants before it reaches the top of the house. It will do so in defiance of me. *The Cottage Gardeners' Dictionary* is part and parcel of your Journal's name, and in there it says—'Mr. Cameron always found tobacco-paper the most efficacious substance to fumigate with.' Can this Mr. C. give me a lesson, knowing the size of my house, what quantity, and how to use it? I really cannot afford to kill myself again with bellows and tobacco.

"If you can answer this in your columns, you will very much oblige, and, perhaps, it will be useful to others as well as myself.—J. G."

[We have always found tobacco-smoke applied by the aid of a Brown's Fumigator effectual for destroying the green fly, but we shall be obliged by any of our readers furnishing full directions how they proceed without the aid of that machine. We say full directions, because it is the small points of precaution which are particularly useful to the amateur.]

CONSTRUCTION OF A GREENHOUSE.

"A COUNTRY RECTOR would be obliged by a reply to certain undermentioned queries respecting a Greenhouse which he proposes erecting, and which will be put together by village hands.

"1. The purposes of the intended structure,—to grow a selection of greenhouse plants which do not require in winter a higher temperature than 45° at night. The position of the greenhouse is rather favourable, being open to the south and west, and well protected from the north and east by high buildings on the back and side. Ventilation to be secured by back wall, which opens into a large building, by

the angular part of the roof under the veranda, and by the front. The smoke of heating apparatus to pass by means of a flue through the back, into a chimney-place in servants' department. Will all this do?

"2. It is wished, if possible, to *exclude rafters* and 'lights' in the roof. The length of the sash-bars being nine feet, what would be the safest dimensions for strength? How far distant should they be placed? The glass to be used is Hartley's Rough Patent Plate Glass, twenty-one ounces to the foot.

"3. It is proposed to heat the structure by Messrs. Burbridge and Healy's boiler, mentioned and described and priced in Vol. VII. of *THE COTTAGE GARDENER*, pp. 8 and 362. Will the house need flow and return pipe all round the back as well as the front? and should the pipes under the front stage be near the wall, or in the middle of the stage, or where? Might a small shallow tank, two feet square on the surface, be against the door, for propagating purposes, so as to let the flow-pipe, if not the return-pipe, pass through it?

"4. What sized boiler of the sort advertised in Vol. VII. of *THE COTTAGE GARDENER*, p. 362, would be sufficient to heat the above, with the objects proposed in No. 1? Dimensions of south front, sixteen feet; west, nine feet; south side, eight feet: total, thirty-three feet. The width of house is eight feet; front stage, about two-and-a-half; walk, three feet; back stages, about two feet. Local circumstances occasion these dimensions."

[1. We have no doubt that the whole plan will answer admirably; and you will thus be able to grow some nice dwarf, bushy plants. Of course, we are to understand that the air-opening at the back of the house not only enters into a large building, but that the air of that building is changed frequently, especially in summer. Such a mode of air giving will enable you to give more air in winter than otherwise would have been easily practicable without hurting tender plants.

2. Suppose that you had a stout bearer across where the south and the west fronts meet—from two to three times the size of a common sash-bar, and another in the middle of the sixteen feet, and the other sash-bars about a quarter stonter than usual, and about a foot apart, you would have strength enough for a nine-feet-wide roof. If fifteen or eighteen inches apart, the bars without rafters would require to be double the size of the common sash-bar; but that would be lighter and cheaper than rafters. A lightish bar might be used without rafters, except at the end, and a lightish one at the junction of the fronts, provided a stout iron rod went longitudinally, fixed to the bars along the centre of the roof. A fixed roof in such a house is best; and with such precautions rafters are totally unnecessary. We have seen a large house glazed without rafters, with squares fifteen inches wide; the bars being about two inches broad, and one-and-a-half inches thick. Your narrow house would not require bars so strong. An iron rod would compensate for bulky size.

3. The sort of boiler named will answer well. There will be no necessity for a flow and return-pipe all round the house. Two pipes along the front will answer admirably, and be quite sufficient to keep up more heat than you want. If it were not for coming in the way of the door, it would be quite as well to have taken one four-inch pipe round in front; make that the highest point, with a pipe air next, and crossed the house; the pipe going along under the back stage and declining to the boiler. But though some would prefer this, there is no necessity for it, nor any reason to make inconveniences on that account. We observe there is no door leading into the house from the veranda on the south, and which we think an oversight, as, having a veranda at each end, there would be much pleasure in passing through the house either way. The pipes need be no objection, as they could rise beneath the first stage, beyond the pathway, leaving it clear at the one end as well as the other. You would find the small tank useful for such purposes as you mention, especially if you covered the space with a bell-glass; but unless in cold weather, you would not have much bottom-heat, but still enough for many purposes. Were you to build a narrow wall up in front of your pipes, and for two or four or six feet in length, and then fill up the space between that wall and the front wall of your house with clinkers, brick-bats, &c., and fine gravel on the surface,

which you could cover with earth or sand, according to what was wanted;—this arrangement would answer better than a tank placed merely on the upper pipe, or with the upper pipe going through it. In such a place, you could strike most greenhouse plants easily, with the assistance of bell-glasses, or a hand-light, or loth.

4. To make sure, and in case you might wish to enlarge or give the place greater heat some day, we would advise a twelve or fourteen-inch boiler. There will be no objection at all to the flue from the boiler passing into another chimney, provided it is so managed that there is no back draught; for if so, and no fire is used in the servants' apartment, the room may be filled with smoke; but the bricklayer will know all about that. As the kitchen is so near, might it not be practicable to fit two pipes from the kitchen boiler? We have had much pleasure in answering these queries, because everything is so explicit: while we still have to complain that, in some cases, we can hardly make out what our friends mean or wish.]

WINTERING GERANIUMS.—DISTINGUISHING A GOOSE FROM A GANDER.

"I beg to say that practically I know nothing of Floriculture. Till within twelve months I had a garden attached to my cottage for eight or nine years, and had about the same amount of time to work in it as most other working-men. Now, the 'force of circumstances' has placed me in a different position, I have undertaken the practical part of what I knew but very little of in theory only; but, thanks to the liberality of a few choice spirits who record their experience in THE COTTAGE GARDENER, I have so far given satisfaction; but, as the poet Burns says, the 'future only troubles me.' But to the point,—

"1. I have taken up my *Geraniums*; the fancy ones, and small *Tom Thumbs*, I have potted, and put in the Cucumber frame, the others I have put in Valencia boxes with earth, as close as I can cram them together. Will that do for the winter; or how long?

"2. I have a good-sized place on the north side of a building. I have put old frames on about half of the roof, the other half pan-tiles not pointed; one open window in the east end, and two small lights on the north side, with a flue on the same side. Can I keep the *Geraniums*, *Fuchsias*, and what tender things I must take up for the winter? I have no other place but a cold garret.

"3. I have a few large *Geraniums* for vases, and a regiment of the 'Beaton Grenadiers' for standards, &c.; must I keep them growing, or let them rest for a few months?

"4. Will the above place do to forward a few annuals in, and keep *Cacti*? Should the above not be intelligible, I shall be glad to put it in any form you may wish.—EVERGREEN."

"P.S.—For the sake of better order, I wish to remove a few roots of *Sea-kale*. Can I do it? If so, what time?"

"Can you easily distinguish the sex of Geese?"

[In answer to the first question of our "Evergreen" friend, we say that no fancy, or young *Tom Thumb* *Geraniums* were ever better treated in October, after being repotted from the borders, than those of "Evergreen." They were potted and put into a Cucumber-frame; and, no doubt they received a little additional heat until the new roots showed through the fresh ball of earth. These being small, young plants, our friend concluded that they could not stand drying for winter, and so he means to give them ordinary greenhouse treatment all along, until next April, when they will be fit to turn out under temporary shelter, to make more room for younger stock. The old *Geraniums* are closely packed into Valencia boxes, but any kind of box will do; the soil in the boxes he intends to keep just from getting dry, and no more. Although he does not say so in direct terms, we happen to know every move in his whole process; he does not say that he cut down the old *Geraniums*, or that he stripped off every leaf from them, but having had an eye to that north house with the flue, we are sure he did not cut them low down; but every leaf was cut off, no doubt, both to make more room for packing, and to save the half-dried stems from too much sucking, when so little "suction" was at the roots. It is astonishing how some people can hit off such things to a just balance.

Secondly, that north side building—if it was long enough, and high in proportion,—would hold alive, during the longest

winter, all the *Myrtles*, *Oranges*, *Fuchsias*, *Scarlet Geraniums*—dry and half dry—with all other half-hardy plants that are in use among us for the flower-garden and dressed grounds; the worst of it is, that not having had the *pointing* done under the tiles before the autumn, larger fires will be needed in the flue when the frost comes—a self-ventilating roof being never a safe one in hard times, like these. "The Beaton, or Boatman Grenadiers" will stand at ease in this, their proper quarters, in the north; and from their cosy, new uniform and constrained habit, they will not press hard on the commissariat this winter, but they must have a little, and that regularly. These veterans dislike confinement, and require abundance of fresh air in dull times. This will be the best test of their capacity for feeding;—as long as they do not *shrink* from the fresh air, it is a good sign they do not want more water at the roots. The north house will be a good place to keep back plants from flowering too soon, but not a safe place to get up annuals after they have sprouted into leaf.

As to the *Sea-kale roots*, about the end of February is the best time to divide them, keeping a good healthy crow to each piece; this, however, is not the best way for a new plantation of *Sea-kale*; the best is from seeds sown about the end of March in a single row, and the seedling plants to be transplanted when they are about a year old; but "Evergreen" knows all that, only it escaped his memory to save and sow seeds of *Sea-kale* at the proper time, and the sets must do for this once.

About the *Geese*,—there is no surer way of knowing a goose from a gander, than to watch which lays the eggs, and which hisses after little boys and girls when the goose is hatching; but perhaps some of our correspondents know of an earlier way of distinguishing the sexes of Geese, and will be good enough to communicate the same. We do not expect much from schoolmasters, who call a dull boy "a gooso;" when it must be evident they mean "a turkey" all the time. There is nothing at all dull or stupid about a real gooso; just the reverse.]

MANAGEMENT OF AMARYLLIS VITTATA, HIPPEASTRUM ACCRAMANII.—SAND FOR PLUNGING.—GLOXINIA CUTTINGS.

"Will you kindly answer the following queries in THE COTTAGE GARDENER:—

"How to manage *Amaryllis vittata* now? My bulbs have died down, but the pots were full of fresh roots, and I have repotted them. Have I done right? They did not flower last summer.

"Do you know any Lily called *Accramanii*? How ought they to be managed now? The leaves are still fresh, and they seem still growing.

"What is best to put on a hot-water tank for plunging stuff—sand or sawdust? I have been using sawdust, but it is such dirty stuff. If sand, what depth ought to be put on? Ought small plants, just struck of *Gloxinias*, to be kept in heat and growing all the winter?

"I am afraid so many questions may be intruding on your kindness, but I know you are always willing to afford information. I have learnt more from THE COTTAGE GARDENER than from all all other gardening works put together.—A. B."

[How odd that you should have overlooked the treatment of the *Amaryllis vittata* in a recent volume, or have not looked in the Index for it. In potting these bulbs when they were at rest, or "died down," you have done exactly the very opposite of right. These bulbs, and all other bulbs which retain their roots after the leaves die down, should not be potted during their rest time, but when they are in full growth. You had better keep your *vittata* dry till you see the young leaves pushing up naturally, that is, without forcing, about the end of January, or later.

The Lily-like plant called *Accramanii* is a very beautiful bulb indeed,—a far-fetched cross-bulb from the nephew of your *vittata*; and if you get both to flower next April they will cross together, and the breed will come near that of *Johnsoni*, that is, white stripes and eyes, and may be white blotches on a dark red or crimson ground; the two require exactly the same treatment; the very strongest loam, small upright pots, according to the size of the bulbs, and not to be repotted oftener than once in six or seven years, unless

the roots split the pot in the mean time. To be kept dry from October to February or March—to start them in a cucumber-frame, or a cooler frame, if it is on purpose for bulbs. The flower-stem and leaves ought to come up together, or not long between; and if the leaves are five inches long without a sign of a flower-stem, that bulb will not flower that season, but the growth ought to be equally well attended to nevertheless. The proper name of this class of bulbs is *Hippeaster*; they are merely *Amaryllis*-like bulbs, with a different habit and constitution. *Hippeasters* will grow and bloom either in the dead of winter, or at Midsummer, in the autumn, or in the spring, at the will of the grower. *Amaryllises* will not give an inch from their natural way, which is to begin to grow late in the autumn, on through the winter and spring, rest in May, and rise to bloom in the autumn. Now, some *Hippeasters* keep green all the year round; and your *Acceramanii* is of a mixed breed between the evergreen ones and the die-down ones, so it keeps on green much later in the autumn than *vittata*, which is of pure blood, if you have it true. All the *inclined-to-be-evergreen Hippeasters* ought to be turned down to dry by the middle or end of October, if they have been growing all the summer. *Acceramanii* is one of them, and now you may stop it at once should the leaves be as green as a Leek; and keep it dry in the pot as it is till next February. Nothing can be more simple than the cultivation of these plants.

For the corners of a hot-water tank, nothing is better than sand, kept a little moist, for plunging pots in for bottom heat; from four to six inches would be a good depth of sand. Small plants of *Gloxinias*, “just struck” from cuttings, must be kept growing on all winter, else you will certainly lose them; the bulbs not being sufficiently matured to bear drying, like old ones.

If you did not learn more from the THE COTTAGE GARDENER than from any other books, it would reflect discredit on our whole staff of instructors. We are conscious of our strength, and shall spare no efforts to maintain it.]

ESTIMATE OF POTATOES.—CEDRUS DEODARA WITHOUT A LEADING SHOOT.

“I wish to intrude upon your time for an answer to one more query; but first allow me to express to you my pleasure at the article on “Young Gardeners,” in your publication for October 27. It suits my case exactly; and I hope Mr. Appleby will strike a hard blow at all the many besetting sins that young men of the present day are addicted to, such as drinking and smoking. I am a young man, twenty-two years of age, brought up to the warehouse of a cotton-mill; but having a decided predilection for gardening, I induced my parents, not many years ago, to allow me to follow the bent of my inclination. They did so; and for my little knowledge I am indebted to THE COTTAGE GARDENER very much indeed. You would imagine that being on the edge of the *Moors of Longdendale*, the shooting grounds of John Toller-mache, Esq., we ought to have a nice, rich, loamy soil; but, believe me, we have not. The surface-soil of about one to two feet in depth is rather stiff and binding, and the subsoil is (in most places) a hard, almost iron clay; but, notwithstanding, POTATOES have done very well with us this year; *Flukes* the best for cropping; *Flour Balls* the next a fine mealy Potato, this); and the old *York Regent* not so good; with an average of the disease running through all; (the last-named one a little the most), but not half so much as in previous years. My query is this;—A *Cedrus Deodara* stood with us all the winter without any shelter; all the harm is, the absence of the leading shoot;—can I make one of the side-branches answer by cutting down to one, and tying straight? The *Auracaria imbricata* stood all winter very stoutly.—EXCELSIOR, *Milbrook*.”

[Do not cut down a shoot; but train one up by tying it to the stump of the old leader. You can cut away the stump when you no longer need its aid. We have seen this done. A *Cedrus Deodara*, in the Doan of Winchester's garden, at Bishopstoke, having lost its leader, has acquired a much denser habit, and is very rich in foliage.]

ROSES ON THEIR OWN ROOTS.

“Will Mr. Beaton be so good as to give us another paper

on growing *Roses on their own Roots*? I presume he holds they can be grown so, better than budded. I pay some attention to Roses, and I confess I do not know how to grow any sort, Tea-scented ones excepted, so strong, or so good, on its own roots, as when budded on the wild stock.—H. V. HEILNER, JUN.”

[As you can grow Tea-scented Roses on their own roots and as these Roses are, confessedly, the most difficult Roses to grow well, you need not fear but you will succeed with all kinds of Roses on their own roots, provided you like the plan; but if you prefer them on wild stocks, and find they answer your purpose that way, you have no occasion to alter your plan for anything which we have said about them. Mr. Rivers is the only one of the great Rose-growers who has yet favoured us with his new *Roso* catalogue, in which he has made a most judicious selection of all the best Roses. He says, summer Roses will soon be out of fashion except a few of the very best, such as the *Cabbage* and *Moss* Roses. He offers plants of all the autumn Roses, on their own roots; but he says, they “are not so well calculated for immediate effect as budded plants, being much smaller; still, in light soils they are more likely to succeed.” Of course they are; and it is for light soils that we recommend them on their own roots; but Mr. Lane, who takes all the first prizes for pot Roses, finds that in the very best pot soils, Roses do better on their own roots. There is no question at all, among practical men, about Roses on their own roots being by far the best; it is only a question of convenience; but all dwarf Roses, and all pillar Roses, with the whole of the climbing Roses, ought to be on their own roots; while standards and half-standards must be had from worked plants; and it is quite a mistaken notion altogether to suppose that worked Roses force better; it is exactly the very opposite, and Mr Lane's practice is the best proof of the assertion.]

NEW PLUM.

“I enclose two seedling Plums for your opinion. The tree on which they were grown is a standard on its own roots; it was a sucker taken from the original seedling, found growing in a rocky situation in a wood on the banks of the river Allen, about two miles above its confluence with the river Tyne. My garden is situated about six miles higher up the Allen than where the seedling originated, consequently, a high and cold situation, where no fine kind of Plum will either bear, or ripen, fruit, except against a good wall. The fruit of this seedling resembles the Greengage, both in colour and flavour; but the Greengage will not bear fruit here at all on standards; whereas, the seedling is very hardy. I think, if it was known and tried in better situations, it would prove an acquisition to our list of hardy fruits, as it no doubt would ripen its fruit a month or six weeks sooner in the southern and midland counties.

“I shall be happy to send you grafts in the proper season, if you choose to try it.—S. J.”

[We think, from the two Plums received by us on the 28th of October, that this is a new variety. If it preserves its habit of late ripening in a more southern locality, it will be a very great acquisition generally; but is certainly most desirable for northern districts. It is a round, pale green Plum, much less than the Greengage, and not quite so luscious, yet very juicy and sweet. We shall be much obliged by receiving, in due time, the grafts offered. If it proves to be a new variety it might be called, “The Allen-dale Greengage.”]

STORING PEARS.

“I have a great quantity of winter Pears this year; and, having just gathered them, have placed them on shelves on straw in a garden-house which is dark, and well protected from frost. Will you kindly tell me if this is the best way of securing their ripening, and keeping in perfection? If not, which is the proper and best way?—F. P.”

[If your garden-house can be relied on as to the perfect exclusion of frost, you cannot mend your plan. If damp, however, the flavour of the Pears will be deteriorated; still, if not particularly damp, there is no occasion for great alarm. But you must beware of the straw, it will assuredly give the Pears a “snatch” not quite in harmony with Pear flavour. If straw is used it should be kiln-dried.]

GROWING TOGETHER THE BARBAROSSA AND BLACK HAMBOROUGH GRAPES.

"Can you tell me if the new *Barbarossa* Grape will safely class with *Black Hambros* in a greenhouse, with a flow and return simply to keep out frost, and to force a little gently in February? Its good qualities of keeping, &c., are spoken highly of; but if it ranks with the *Tokay* section, its introduction into such a house and in such company would only eventually disappoint. But I am, myself, inclined to think of it somewhat otherwise.—J. S. L."

[The Grape is quite of the *Hambro* section, and very similar in habit, although, perhaps, a little more tender. It has little in common with the *Tokay*, so here need be no bias. We think, that under the circumstances you described, you may fairly venture.]

POTATO-SETS FOR AN ACRE.—AUTUMN-SOWING CELERY.

"Will any of your correspondents kindly inform me what quantity of Seed-Potatoes (whole sets, medium size) will be required to plant an acre of land? Also give me their opinion upon sowing *Celery* seed in October, which is strongly recommended in a work of some years standing?—B. H. S."

[The following is the best answer we can give you:—Table of the number of sets of potatoes and total weight of the same, required for planting an acre at the following distances; each set containing only a single eye, and weighing two ounces; the distance between the sets in the rows being nine inches:

	Number of sets per acre.	Weight of sets per acre.
Rows 18 inches apart.		cwt. lbs.
19	38.720	43 0
20	36.682	40 104
21	34.848	38 97
22	33.188	37 4
23	31.680	35 40
24	30.302	33 88
25	29.040	32 44
26	27.874	31 12
27	26.806	29 100
28	25.813	28 88
29	24.891	27 84
30	24.033	26 92
	23.232	25 104

Have any of our readers tried autumn-sowing *Celery*? If they have, they will oblige us by communicating the results.]

THE TREASURES OF THE VEGETABLE KINGDOM.

GUTTA PERCHA TREE (*Isonandra gutta*).

From a tree growing in the jungles of the Indian Archipelago is obtained that substance which is now so well known in commerce, and to the application of which, in the arts and sciences, there is scarcely a limit. Notwithstanding all the homely and vulgar uses to which it has been turned, gutta percha is eminently suggestive of calm and serious thought. Converted by the skilful artist and artizan into objects fitted to elevate the taste or embellish the mansion, it is made to supply the wants of the poor, or increase the luxuries of the rich. In domestic affairs, gutta percha receives extensive patronage, and, with the exception of such as are made of steel and iron, the utensils and other light articles of furniture which are made of this substance are too numerous to remember. But useful in such a mundane capacity as gutta percha is proved to be in all these things, its highest claim to consideration must rest on the great impetus which, in connection with electricity, it seems destined to give to the progress of civilization throughout the world. Our snuffer-trays and picture-frames could be manufactured without it; and it is somewhat doubtful whether it will ever supersede good leather in keeping our

feet dry and warm; but if its power in withstanding the action of the salt water is so great as scientific experiments have confirmed it to be, the electric wire might have been confined a long time to *terra firma*, before being laid over the bed of the channel as a ready and indefatigable messenger bearing the thoughts and wishes of one people to another. Now, as the first instalment of this connecting chain lately "payed out," are the two greatest powers of Europe, though separated by thirty miles of water, enabled to communicate with each other with all the rapidity of lightning itself. And the day is not far distant when, by means of gutta percha cords between distant continents, all the nations of the earth will be made cognizant, with the same rapidity, of the leading events which are passing in any particular direction of the globe. In considering this subject, what pleasing thoughts crowd upon the mind! What grand and hopeful visions haunt the imagination! Gutta percha, it is true, forms only a part, and perhaps the most insignificant part, of the wonderful medium of communication just completed between the shores of England and France, and yet that medium would be incomplete—probably impossible—without it. Who first found out that this tree contained within its bark a juice that could be turned into a substance more durable than leather? How did he find it out? How was it only found out just when the progress of science had revealed the means of making the lightning subservient to human purposes of the highest importance—in fact, just when, like long parted and unknown relations, one people yearned more and more to form a system of constant communication with another? How were all these parts of which the submarine telegraph is formed brought together in their present perfect condition? These, and many similar enquiries, suggest themselves to the anxious mind. When we endeavour to pass in review the various phases which the line just completed between Dover and Cape Grinez may be supposed to have undergone before arriving at that stage at which it forms one of the greatest facts of the age, we are naturally filled with awe and admiration at the mighty works of creation. For hundreds—perhaps for thousands—of years, the sap, in the form of gum, had been oozing from the bark of the *Isonandra gutta* tree, unheeded, because unknown, till by some purely accidental, yet fortuitous circumstance, and only a few years before the middle of the 19th century—after thousands of the wise, the good, and the great, had lived and died—its wonderful properties are discovered and made known to the world! How much have we not to learn of all things! But how much may we not have yet to learn of trees, and how important is the study of them!—P. F. KEIR.

TO CORRESPONDENTS.

PERRY.—A *Constant Reader* will be glad to know when it should be racked and bottled, and to have any hints for its management.

ERROR.—The signature to the article on *Calceolarias* at page 69 should have been J. Perkins.

BOTANICAL TERMS (B. B. Old Lane).—There are many cheap works where these are explained; and it would take up more time and space than we can afford to spare.

COVENT GARDEN PRICES (F. G.).—Those given where the wholesale prices.

POULTRY-KEEPING (A Young Beginner).—You will find all the information you ask, and much more, in *The Poultry Book*, published by W. S. Orr & Co.


POTATO-GROWING (A Beginner).—Your soil, which has only grown green crops for years, will need no manure now you wish to plant it with *Potatoes*. No variety we know exceeds *Rylott's Flour Ball* as a table Potato. Plant eight inches deep. We never use lime nor any other nostrum. A good, well-drained, light soil; well-ripened, sound, whole *Potatoes* of medium size, planted about the middle of November are the best precautions to win success.

NAMES OF PLANTS (J. Reynolds).—1, 2, and 8, are *Aspidium felix-mas*. 3, Too small a specimen. 4, *Cyrtomium falcatum*. 5, *Casseheera hastata*. 6, *Adiantum formosum*. 7, *Pteris cretica*. 9, *Blechnum occidentale*. 10, *Gymnogramma chrysophylla*. We are not quite sure of your written numbers 6 and 9, they are either as we have stated, or the names must change places. (*Philo*).—*Caprifolium sempervirens*, and *Pinus Austriaca*.

NAMES OF FRUITS (Selham Rectory).—No 1, *Duchesse D'Angouleme*. No 2, Over-ripe and crushed. (*Robt. Sells*).—*Beurré Diel*.

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WEEKLY CALENDAR.

D M	D W	NOVEMBER 14—20, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
14	TU		29.740—29.672	45—30	N.W.	—	18 a 7	11 a 4	morn.	24	15 25	318
15	W	Beech leafless.	29.635—29.631	40—36	S.	11	20	9	0 54	25	15 15	319
16	TH	Teal arrives.	29.695—29.644	46—25	W.	—	22	8	2 6	26	15 5	320
17	F	Titmice near houses.	29.801—29.735	46—18	N.	—	24	7	3 21	27	14 53	321
18	S	Widgeon arrives.	29.995—29.956	41—21	S.W.	—	25	5	4 41	28	14 41	322
19	SUN	23 SUNDAY AFTER TRINITY.	30.054—29.969	49—25	S.	—	27	4	6 3	29	14 27	323
20	M	Sun's declination, 19° 42' s.	30.086—29.887	46—23	S.	06	29	3	sets.		14 13	324

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 49.1°, and 35.5°, respectively. The greatest heat, 62°, occurred on the 16th, in 1840; and the lowest cold, 15°, on the 16th, in 1841. During the period 95 days were fine, and on 94 rain fell.

THE First Extraordinary Meeting of the BRITISH POMOLOGICAL SOCIETY was held at the Rooms, 20, Bedford Street, Covent Garden, London, on Monday, the 6th inst. The objects of this meeting were to collect from all parts of the country specimens of the Fruits which are now in season; to correct their nomenclature; to compare their relative merits and qualities; to ascertain wherein and to what extent they are adapted to the soils and exposures in which they are grown; and to examine and report upon the merits of new and seedling varieties. The Society, although but recently established, and, necessarily, having a very short period allowed to make known its intentions, had the satisfaction of seeing, at this meeting, a ready and hearty response to its application to the numerous fruit-growers throughout the three kingdoms, which clearly showed the great interest that is felt by both public and private cultivators in the important subject of Pomology. It was gratifying to all present to see the most sanguine expectations of the most sanguine members far surpassed, by a gathering of upwards of *twelve hundred* specimens of the Fruits of Great Britain, produced under every variety of circumstance of soil, situation, aspect, and mode of culture. Who now shall say, "There is no need for such a Society?" We have over and over again said that such a Society was needed; that every civilised country in the world had, and encouraged, such Societies; and that it was a disgrace to Great Britain, first as she always is in Science, Literature, and Art, that a subject so important and so capable of development should be so neglected. The results of this Meeting show that our complaint was not ill-founded, and that there are many more who are groping and thirsting after information on this subject than casual and careless observers imagine, and that the subject is not the hobby of a few, but the interest of the many. The results arrived at at this Meeting are neither few nor unimportant. We have seen and ascertained in what soils and climates the same varieties either do not succeed, or in what degree of excellence they can be produced. We have found, also, how, in some of the coldest and most exposed situations, certain other varieties can be grown with the greatest success, while, in the same situations, other varieties cannot be grown at all.

Among the subjects exhibited, we observed some magnificent specimens of Pears and Apples, from walls and standards, from Mr. McEwen, of Arundel Castle

Gardens. Both as regards size, flavour, and colour, these were perfection itself. Another collection, equally fine, was sent by John Elliot, Esq., of Trisillian, Kingsbridge, Devon; the size, colour, and flavour of which were also perfect. Mr. Cox, gardener to W. Wells, Esq., of Redleaf, Kent, sent very fine examples of the new Pear, *Beurré Clairgeau*, and also of *Beurré Nantais*. The former is the new variety so much lauded at the present time by the Belgian nurserymen, as the finest Pear in cultivation; but it was found, on being tested, that it would hardly rank above the standard of a second rate variety, an opinion which was fully confirmed by another specimen, sent in the collection of M. Langelier, of Jersey.

Mr. Rivers exhibited a collection of Pears of equal merit to the above, as regarded size and colouring, from the garden of a gentleman at Limerick. These were grown in a "hedge-house," or as it is, perhaps, better known by the name of "an orchard-house." In this respect they were interesting, as furnishing examples of those varieties which could be cultivated successfully under such circumstances, and such as could not. We tasted the *Doyenné blanc*, which, though very beautiful, both in shape and colour, was flat and doughy, and sadly deficient in flavour. The *Louise Bonne of Jersey*, on the contrary, though of good size, was deficient in colour, but very tender, juicy, and melting, and with a particularly delicate and beautiful flavour, though wanting that piquancy which characterized specimens of the same variety, grown by Mr. Rivers himself on pyramids, grafted on the Quince-stock. We are not at liberty to enter fully upon the distinguishing characteristics of the different varieties, and their comparative merits, as the Society reserves to itself the right of publishing the observations made, and the results arrived at, from these Meetings, in Transactions of its own, which will appear in due course; an arrangement in which we perfectly concur, as we believe that any such Society which allows the facts it has brought to light, or its proceedings, to be filched or frittered away by those whose interest it may be to take possession, and make a property of them, is parting with that which is its life and soul, and capital. We, therefore, look forward with interest to the publication of the proceedings at this Meeting as they will be given through the authorised medium of the Society.

Mr. Roné Langelier, of St. Helier's, Jersey, sent a very valuable collection of 152 varieties of Pears, which

consisted of many of the newest Belgian varieties; the greater number of these, however, had not arrived at maturity, and were, therefore, retained for examination at subsequent Meetings. Mr. Bready, of Somerleyton, near Lowestoffe, also contributed an excellent collection, a full report of which will be furnished through the Society. The Rev. W. D. Fox, of Delamere, near Chester, sent a collection of Pears, some of which were fine specimens, and very highly-flavoured, and which was very valuable, as exhibiting those varieties which succeed so well in a very cold district. There were some magnificent specimens of the *Blenheim Orange* Apple, and *Beurré Diel* Pear, supplied by M. G. Thoyts, Esq., of Fulhamstead, near Reading. The Apples were from a standard, and measured five inches in diameter; the Pears were from a south-west wall, three of them weighing two pounds-and-three-quarters in the aggregate. The soil on which these were grown is a cold gravelly clay. From Mr. M. Saul, of Stourton Park, near Knaresborough, there was a collection of eleven sorts of Pears, and forty-eight of Apples, which also excited considerable interest. Of the latter were specimens of the *Ribston Pippin*, from an orchard upwards of a hundred years old, in the immediate vicinity of the spot where this valuable Apple was first raised, and very fine specimens they were.

Mr. William Barratt, of Wakefield, sent a very large assortment of Apples and Pears, illustrating the pomology of that district. The greater, and, indeed, almost the whole of these could not be examined, as they were not in a ripe state; they were, therefore, kept over till next Meeting.

A very large and interesting collection, both of Apples and Pears, was furnished by Mr. James Lake, of Bridgewater, among which were many fine specimens, exhibiting the very advantageous circumstances of soil and climate with which Somersetshire is favoured. Among these were some of the choice cyder Apples, such as *Kingston Black*, and many others. Speaking of cyder Apples, calls to our remembrance a collection of forty or fifty varieties from Ross, in Herefordshire, which, unfortunately, had no names attached to them. This was the more to be regretted, as it is a well-known fact, that of all fruits, cyder Apples are those of which least is known by pomologists generally. We hope, however, on a future occasion, that we may see a complete named collection.

We have hitherto spoken of collections from the south, but there was also a very large one illustrating the Pomology of the Border counties, as found in the orchards on the banks of the Tweed. This was forwarded by Mr. Thomas Hogg, of Coldstream, and furnished many new facts, showing how well some of the fruit of recent introduction, and which are generally cultivated only in the south, may be had in very good condition so far north. In this collection were also many of the old standards of the Scotch Pomology, such as the *Achan* Pear, the *Green Pear of Yair*, three or four varieties of *Leadington* Apples, and many others

which would have interested some of our *Anglo-Scotian* gardeners, as reminiscences of the olden time.

There was a collection of Seedling Apples from Mr. S. Smee, of Halstead, of which a report will also appear in the Transactions. Messrs. Webber and Co., Covent Garden, sent several monstrous specimens of *Chau-montel* Pears of Guernsoy growth; as well as some noble ones of *Duchesse d'Angoulême*. They also exhibited a plate of Peaches, which *a month ago* were shipped at Rotterdam to Hamburgh, and thence to London. After being three weeks gathered, they preserved their flavour in a high degree, but when they were exhibited at the Rooms they had become insipid. The Society has taken steps to obtain the name of this desirable sort, which is a freestone variety. But one of the most attractive objects at the Meeting was a Seedling Peach, brought by Mr. Turner, of Slough, which was raised by Colonel Salway, M.P. for Surrey. It was of a rich yellow colour both in skin and flesh, very delicate and melting, with a flavour similar to the Peach and Apricot when highly ripened. Although this was not gathered from the wall till the 3rd of November, it was as highly-flavoured, and in as good condition as a September Peach.

There were two bunches of a Seedling Grape, exhibited by Mr. Critolpb, gardener, near Norwich, which, however, did not possess sufficient merit to recommend it being cultivated as a new variety.

Messrs. Veitch and Son, of Exeter, sent very fine specimens of a new Quince, called the *Monster Quince*, which they had imported from Syria, the flavour of which was milder than that of the common Quince; and the tree was said to possess such a vigorous growth as to recommend it as a good stock for Pears.

We have thus given an outline of the Exhibition, which was one of the best we have ever seen. To particularise all that was exhibited would occupy more room than we can afford; but from what we have stated, our readers will be able to form some idea of this, the first Extraordinary Meeting of the BRITISH POMOLOGICAL SOCIETY.

CONFLICTING judgments at Poultry Exhibitions are among the recognised evils of such institutions, and for which various remedies have been suggested. To draw just conclusions, however, as to the methods by which these occurrences may probably best be obviated, we should, in the first place, refer to the causes whence they seem to originate.

Now, these may be broadly stated as being the result, either of incidental changes in the condition and appearance of the birds themselves on the different occasions of their being exhibited, or else, an opposite standard of merit on the part of their judges.

In the first-named instance, the cause admits of no remedy; for circumstances, over which the most careful exhibitor has no controul, are ever liable to reverse the order of previously-successful pens. Illness, an accident, or inattention, in all their varied forms, will

always exert an influence of this description; and the tone of aggrieved disappointment in which such defeats are too often spoken of, is, therefore, most improperly indulged in. On this head, we think no more need now be said, cause and effect being both of such easy recognition. But the standard of Poultry merit, we must certainly admit, is far from being so uniform as exhibitors have a right to expect, and the attainment of the main objects of Poultry Societies undoubtedly requires. Here, again, a subdivision must be made, for such differences of opinion are not limited to what should be regarded as the excellencies of the different breeds; but the features that should lead to disqualification are very far from meeting with an unanimous assent.

How, then, shall this difficulty be provided for? In the present state of Poultry knowledge, the concurrent opinion of a given number of the most experienced of those who are in the habit of acting as judges would, doubtless, carry great weight; and, if submitted to the periodical re-consideration of a similar body on certain stated occasions, such as that afforded by the Birmingham Meeting, when a conference of this description might readily be brought together, its authority would soon enforce obedience. Objection, we are aware, may possibly be taken to the fluctuation of rules consequent on this occasional revision; but, at present, it would be a bold assertion to assume that we knew everything concerning even those fowls that are best known to us; and this the more particularly, when we place in comparison our present knowledge of Poultry generally, with that possessed some few years since by those whose attention had been the most carefully bestowed on this subject. It is not, we apprehend, too much to say, that we are justified in looking forward to the speedy attainment of far better information than we can at present lay claim to with respect to the natural history, the characteristics, the properties, and the peculiar features and excellencies of the several races.

The classification of our exhibitions, equally with the principles on which the premiums would be awarded, would thus become matters of general assent, from a just confidence in the close scrutiny to which every breed would have to submit; and the exhibitor would no longer be induced to select his specimens in accordance with the known or supposed bias of any probable judge.

No one can be more thoroughly convinced than ourselves of the utter impossibility of any mere book-knowledge rendering an individual competent for discharging the duties of a Poultry Judge. So far from it, indeed, that we should expect that any servile adherence to minute rules would be very likely to exert an unflavourable influence on the decision of even competent persons. The certain result of such a system would be to lay too much stress on single or less important features, to the very possible omission of weightier considerations. An eye with a natural capability of scanning at a glance the various candidates for honours, is an indispensable quality in a good judge. This,

indeed, is far from being all that is required, since practical experience, and a knowledge of recognised points, are most strictly essential qualifications; but still, the absence of the first-named must ever negative the latter.

That such an impression prevails, is sufficiently evident from the comparatively small number of those gentlemen to whom the office of judge has been confided by the leading societies. Many a good arbitrator in some one, two, or even three classes, would be utterly abroad were these limits to be exceeded; and there are, in truth, so many requisites of such various natures to qualify the Poultry Judge, that the same remark will probably long hold good.

But although a tabular standard of merits will never redeem inefficiency, it will, nevertheless, procure certainty on points on which judges are now constantly divided; and on this account will render their divisions more palatable to exhibitors, and better calculated to advance the objects of the society themselves.

We should anticipate the best results from the publication of such authoritative statement, and our aid, we need hardly add, would most readily be accorded to its promoters. But it should be remembered, that such a task must not rashly be undertaken, for any ill-digested attempt to regulate such questions would probably very seriously retard ultimate success. The union of the leading judges is the first and the main point; until this can be effected, the labours of even a majority of those who may be thus regarded would be insufficient, and their design abortive. The constitution of a body capable of undertaking the task, and such as would be likely to command public assent to their conclusions, might, perhaps, be attended with some difficulty; but, surely, there is no primitive obstacle of sufficient magnitude to forbid the attempt. But as suggestions of what ought to be done, do little good unless there is also an endeavour to shew how it should be done, we would plead this as our reason for the expression of our wish that the "Birmingham" Committee would take the matter into their consideration; believing, as we do, that such a selection as that body might arrive at would be that to which public confidence would be most readily accorded.

With a desire to commence the initiatory proceedings with as little delay as may be, we hope to lay before our readers such a summary of "poultry characteristics," as may best express our conclusions on past experience, and elicit the observations of others; since it is evident that a free discussion of the question will materially aid the labours of a body, such as we have presumed may be brought together at no very distant day for the full solution of these disputed points.—W.

PRUNING THE PLUM AND APRICOT.

THE PLUM does not require the amount of attention, as to winter pruning, that some others do, unless planted in very rich soil, where, as a trained tree, some kinds are apt to become quite unmanageable. Under all

circumstances, such kinds as those belonging to the *Magnum bonum* section (by which I mean, such as the *Washington*, very many of those bouncing American kinds, which possibly owe their origin to the old *Egg Plum*); such, I say, are apt to produce, here and there, huge bloated shoots, which, when neglected a while, assuming a somewhat perpendicular direction, detract much from the proper wood; and hence the importance of early summer dressing; for those shoots ought to be all rubbed clear away. Such must be removed totally in trained trees at the winter's pruning, unless required to supply blanks, when they may be pruned back to half-a-dozen eyes or buds. Such may be the first proceeding with trained Plums, and now a regular and judicious thinning of superfluous spray may proceed; the extent to which this must be carried, of course, being dependent on the general habit and character of the tree, together with its previous treatment.

In some cases, trees may be found so lean in condition, through over-bearing, or otherwise, that little or no knife-work has to be performed; in others, the trees are almost suffocated, as it were, and much resembling a Privet bush. The pruner, therefore, must proceed with a full consideration of these matters, and if he is at a loss, the best thing he can do is to examine closely a well-managed tree in some first-rate garden, and by a steady examination of such, he will soon acquire an idea of the amount and character of wood it is expedient to retain. Here I may point to the tying-down system, for which I am a strenuous advocate, having proved it to be applicable to most of our fruits, especially Pears, Plums, and Apricots. I have before stated in *THE COTTAGE GARDENER*, that where this has to be carried out, the main leaders ought to be trained at greater distances. If such has not been the original plan, and the party is desirous of pursuing the tying-down principle, some re-arrangement of the leading shoots, and even some sacrifice, will be necessary. In this case, those leading branches which have become more unproductive of bearing-wood than others may be rejected, and a few thus removed, in order to provide the requisite distance, the remainder may be nailed in their positions, and then the tying-down proceed. The shortest-jointed wood must, of course, be selected, as in all other fruits, and in tying-down, let the operator not lay two side by side.

If it were possible to lay down a maxim which might, under all circumstances, be strictly adhered to, I should say, after tying one down at the extremity of the branch, select one placed about the middle of that shoot, and so on with the next, to the very collar of the tree. None of these shoots require shortening if properly selected, unless it be for the purpose of producing more shoots in naked portions, and this is seldom desirable.

THE APRICOT.—The pruning of this so much resembles the Plum, that I need not enlarge on it here, and will, therefore, be somewhat brief. Apricots, like Plums, sometimes produce coarse breast-shoots; these ought to have been pinched in summer, and then there would be no occasion to counsel the winter-pruner as to their removal. Blanks must, however, be thought of, and, at times, it becomes necessary to reserve even such rampant subjects, for an improper shoot is to be preferred to a blank. Apricots do not require shortening; indeed, as a maxim, they are better without it; still, cases arise in which the pruner should not be ever fastidious. After removing gross and superfluous breast-shoots, observing to leave some short-jointed spray for tying-down, the pruner must examine the face of the tree all over carefully, and see if any summer shoots of a late growth, and, by consequence, of a barren character, shade the true blossoming spurs. The Apricot, when in a proper condition, produces, perhaps, more of what I may be permitted to term natural spurs than most of our fruit-trees; and although some kinds will

blossom and bear on the young wood, yet, on the true spurs we must mainly rely; for blossoms from the young shoots most generally develop imperfectly. The pruner, therefore, must, with some precision, cut away cleanly all immature-looking spray which may tend to shade the blossom-buds and produce too much spray in the succeeding summer: this is important. These things done, a parting glance may be cast on the leaders, in order to see if there be one or two too many (which is seldom the case), or whether, in the event of a large portion of wall being still uncovered, occasional pruning-back may be of service.

Before concluding this rather brief and hasty paper, I may observe that in the pruning of breast-wood, in most fruits under a training system, it is bad practice to "spur back," as it is termed, with the idea of producing abundance of natural blossom-spurs. That such are occasionally produced, I do not deny; but the necessity of being driven to rely on such argues, at once, errors in practice. If trees are properly attended to from their early training, it will be found that natural spurs will be steadily developed as the growth proceeds; that is to say, if the soil has been duly prepared, and the growth, consequently, uniform, and not in a fitful way.

I have linked the Apricot here with the Plum on account of some identity in habit of growth, &c.; but the pruning of the Apricot is, perhaps, much better carried out in the middle or end of February than in November or December.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—REGENT STREET, NOV. 7TH.

I took a turn or two in the Borough to-day, before the meeting opened, and there I saw Dahlias in full bloom, in several of the gardens of Hospitals and Asylums, and far better-flowered Chrysanthemums, in open borders, than one sees a hundred miles out of London. I never before saw a full bloom of Dahlias and Chrysanthemums together, and probably I shall never see the like again. Carlton Gardens, at the bottom of Regent-street, are the most fashionable "gardens" in London, and there the Chrysanthemums were splendid; or, at least, might be so, were they not tied broom-fashion by the housemaids; but Stephen Murphy had them quite as fine in his crowded back-yard beyond Astley's. No flower stands the smoke of towns better than the Chrysanthemum, and the soot never seems to fall on them at all; or, perhaps, it may be from the universal dirty appearance of London, and from the horrid bad smells, that flowers look so gay, by contrast, and smell more strikingly than they do in the country.

The Horticultural Society have changed the usual day in November. Instead of being on the first or second, as formerly, we had it a week later, and gained considerably by the change. I never saw the room so full and so gay, and of such thoroughly good things, in November; every table was crowded, and lots of plants had to be arranged round the room, without tables or benches. Her Majesty, and the Duchess of Sutherland, entered the lists, as such great ladies knew how, and the Queen was as "victorious, happy, and glorious," as you would all wish her to be. Mr. Veitch went full tilt against the Leaden trade, and, without breaking a lance, cleared the ground, right and left, and straight forward, to the post of honour. Mr. Robinson, gardener to J. Simpson, Esq., of Thames Bank, Pimlico, and Mr. Moeket, gardener to J. Alnutt, Esq., Clapham Common, two of the best Chrysanthemum growers in England, contested so closely with *Pompones*, that this Society actually pronounced that the cultivation of these flowers could hardly be carried any farther. The Speaker of the

House of Commons, Lord Charles Wellesley, and the Duke of Bedford, competed in the higher classes, and several others, whose names being less familiar to my ear, I forget just now, and some will be found among my notes, lower down.

There was a visible *giggle* all over the audience when the lecturer read a letter from Sussex about *Potatoes*; in which it was stated, that the writer had no faith in "the deductions of science," nor on the voluminous outpourings of practice, in reference to keeping *Potatoes* sound; but that the writer had, himself, discovered the only true remedy at last,—that of dusting the affected *Potatoes* with wood and turf ashes, and, I think, with some other kind of ashes as well; that being the very "deduction" which was recommended by the three commissioners whom Sir Robert Peel sent over to Ireland about the Potato disease, on its first breaking out; and we all remembered that the lecturer himself was one of the three commissioners; so the first and last "deductions" squared to a tee, and seem to be the best remedy after all. Now to my note-book.

The newest and best plant in the room was from Mr. Veitch, a species of *Sonerila* called, or to be called, *maculata*. This plant was among the first which took my fancy at the July show of this society, among Mr. Veitch's new plants with ornamental leaves. It will be found in my report of that show; but it was not then in flower. It is one of those charming little plants which one can never forget after once seeing it; the leaf is not quite so large as a Peach leaf, but in that way, and of a darker green; the surface is regularly dotted in lines with white dots, about the size of a pin's-head; the growth is low and bushy at first, then comes a *sarmentose* growth, like that of a Strawberry plant; but woody, short, firm runners issue out from all round the plant, and at from four to six inches another plant is formed at the end of each runner, just like that on a Strawberry. From this first plant two more runners go right and left, and each of them produce a plant at the end of four inches, and so on they go all round, till, at last, the whole pot is covered with a dense mass of leaves and slender branches; and such leaves! but the flowers eclipse them; for from every one of the tuft-like growths, and from the old mother, all over rise slender flower-stems, three or four inches high, and each of them carry from five to twelve bright, pink, starry flowers, coming up in succession. You never saw such pretty things in all your life. The very stamens, inside, give a peculiar grace to the whole; they are bright orange, are shaped like the head of an arrow (sagittate), and incline to one side at an angle of forty or fifty. The whole plant was not above eight or nine inches high, and double that across the pot. All the species of *Sonerila*, we were told, are dwarf plants from India, well deserving of all our care; the accent is on the *i*, and sounds like *y*, thus *Soneryla*. There were six "runners," or young plants, in bloom round the large pot in 60-sized pots, just the sort of gems for which country gardeners are often teased to provide for glasses, or little fancy stands in the drawing-room, and on the corners of the mantel-piece. These gems are now being sold as fast as they can propagate them, for just twenty-one shillings, or say about one-fourth their value; but they increase so easily that they can afford to sell them cheap.

Two fine, new winter-flowering hybrid *Fuschias* come next in Mr. Veitch's collection. The noble hybrid from *Spectabilis*, which is named *Dominianum*, after their foreman, is one of the handsomest and boldest-looking plants for a conservatory which is now in the market; and the other, a cross between two species, *Serratifolia* and *Simplicicaulis*, and called *Pendulina*, is a good improvement on *Serratifolia*, in flower, leaf, and habit, and is a great acquisition for our stock of winter-flowering plants, without forcing. Messrs. Veitch also

showed cut-branches of a new variety of *Pernettya mucronata*, called *Speciosa*. It looks exactly like *Mucronata*, but was loaded with purplish berries, as close as they could stand—a charming contrast to *Cotoneaster microphylla* in full fruit.

Orchids were the next part of Messrs. Veitch's contribution; and we begin with the beautiful blue *Vanda ceculea*, which is now a regular visitor in November. It had three spikes of flowers, and the flowers were of the lightest blue. After it the seldom-seen *Angraecum bilobum*, with six drooping spikes, crowded with bluish-white blooms from end to end; then four large plants of *Barkeria Skinnerii*—the lighter variety—with ten or fifteen long upright-blooming shoots on each plant. I bothered the London growers, for the last two winters, about the *Barkerias*, saying we could do them hereabouts so much better than in the London smoke, and here is the result. It was not the Society's medals that brought out these three *Barkerias*,—not a bit of it; but only another instance in proof that the British Lion will not be bearded in his den with impunity, any more than the Scotch Thistle; and, if we are beaten this time, we shall try again and again before we give up to these Londoners. Two varieties of *Calanthe vestita*, with large white flowers on curved stalks, one plain eyed, and one with the deep purple eye. These beautiful-ground Orchids have the same habit as *Nerine* among bulbs; they "throw up" in the autumn, continue to grow with us all through the winter and spring, and go to rest by Midsummer; so that they are under the disadvantage of the strongest heat of our stoves at the duldest season, after the leaves are full formed. A tall *Aerides suavisissima*, four feet high, and clothed to the pot, had two long racemes of bluish-white flowers of the sweetest odour; and a large *Vanda*, with brown-speckled flowers, the plant as tall as a man, and well furnished throughout.

Mr. Wooly, gardener to E. B. Ker, Esq., had two most charming ground Orchids, the most suited for a drawing-room table of all the tribe; they are called *Celoglyne Wallichianum* and *C. maculatum*, in gardens; but Mr. Wooly had the right name,—*Pleione*. The former, or *Wallichianum*, had fifteen flowers of a deep purple colour; and *maculatum* had thirty full open, or in bud. They are snow-white, with a richly-spotted and stained lip. These plants are grown in flat wide-mouthed pots; the bulbs are half-covered in the mould; the flowers rise, singly, before the leaves, all over the pot, and the surface is covered with live moss, so that one might think they were cut flowers stuck in the moss as thick as they could stand; and a reference to this was made in the lecture, so that people might not run away with that idea. We were also told, that for a long time the proper culture of these *Pleiones* was not understood, and the plants were not seen in perfection, until it was discovered that the roots or bulbs grow naturally, like our *Crocus*, first carpeting the ground with their naked flowers, after this clothing it with their leaves in the hot, rainy season; and then going entirely to rest for some months. They also exhibit the little-understood character of *Nerine*,—requiring double the usual heat in winter, and while their leaves are green, and resting from the end of June in a comparative coolness till the flowers "come of themselves," late in the autumn. There was a specimen-plant of *Cypripedium venustum*, more than a yard in diameter, and carrying no less than thirty-eight flowers of the largest size—a splendid example of the best treatment. This plant was from strangers to the London boards, the Messrs. Wood and Ingram, nurserymen of Huntingdon. The only other Orchid for competition was a small *Barkeria elegans*, from — Rosher, Esq., St. John's Wood; who also sent a *Rhododendron Javanicum* in bloom, and some others.

The Artillery plant—*Pilea muscosa*, as they call it, was there from the garden of the Society, but nothing was said about how it fires away, like a park of artillery, when wetted, on a hot day, as Mr. Jackson and I amused ourselves with it the summer before last, as already noticed.

Begonia Thwaitesii, from the same, was conspicuous by its large purple leaves, blotched with green and large blush flowers; this belongs to the "Variegated plants." *Erica Cliffordiana*, with delicate white, long-tubed flowers; *Echeveria retusa*, and a collection of *Pompones Chrysanthemums* were from the Society's collection.

From Mr. Henderson, of Pine-Apple-Place, there was a mixed collection, the best of which was *Polyspora axillaris*, or, perhaps, more properly, *Gordonia axillaris*, and what was once *Camellia axillaris*. This is, certainly, a splendid evergreen for a conservatory, not so much for its large, white, single blossoms as for its habit and healthy looks, and the long time it holds on in flower. *Lantana alba grandiflora*, I should think a seedling from *mutabilis*, was a specimen grown plant in the Pine-Apple-Place's best style and full of bloom; an *Ixora crocata*, the best of them for coming in at different seasons. A large *Statice Halfordi*, the best of the broad-leaved breed. *Acacia oleifolia*, the earliest to flower of this large family, and the longest time in bloom, that is, from September to February;—this graceful globular-flowered *Acacia* is never out of bloom; also, *Lechenaultia formosa*, and a seedling Sunflower, or *Rudbeckia*, from Texas, which made a text for running down all Texean seeds and seedlings as no better than Scotch, or Sow-thistles.

POMPONE CHRYSANTHEMUMS.—Nothing was ever seen in China, or out of it, to compare to the Pompones of 1854. Six plants, hardly a yard high, pots and all, and full four feet in diameter, all covered with bloom, from Mr. Veitch, and yet he was only third best in the prizes, if I heard the awards rightly. I was never one of the judges on this flower, and I shall never be a florist of any note, but I would put the next two collections on the same footing. The one for best bloom, Mr. Robinson; and the other for best gardening, as exemplified in *bona fide* travelling on one leg; while those of the first prize only stood on two, and some on three legs; the meaning of which is, that two good, or best growers, grow their plants alike till the last shift; one of them then put two plants, or three plants into one pot, and made a greater dash with flowers; while the other grower kept to the single plant specimen, and was not much behind with them; but, as I said before, I am no judge in that line.

Mr. Robinson had nine plants in the most exquisite style of growth and bloom, as follows:—*Sacramento*, the best yellow; *Ninon*, a French-white, tipped with purple-brown—a living beauty; *Solfaterre*, a fine yellow, flat on the face; *Paulidette*, shaded, light purple; *Autumnum*, shaded Spanish-brown. This is the most singular colour in the vegetable kingdom; a perfect brown, shot-silk, and the brown very peculiar, to the bargain. *Drine Drine*, another yellow, almost as good as *Sacramento*, but a different bloom; *Surprise*, a little deeper than French-white:—this is my own favourite. *Model*, another French-white, but with two shades of white.

Mr. Moeket had *Adonis*, a flat, red shaded flower; *Louise Meliez*, two shades of yellow; *Fenella*, yellow, and as if fringed, fine; *Sacramento* and *Solfaterre*.

Messrs. Veitch had *Lebois*, shaded pink; *Model*; *Cedo Nulli*, large white, tipped with rose; *Le Nain Bebe*, a flat French-white; and *Sacramento*.

Mr. Chandeler, of Vauxhall, sent *Sacramento*, *Hendersonii*, the earliest; *Solfaterre*, *Surprise*, *Ninon*, *Geraldo*, a fine one, and a new colour, white, and a shade of lemon; *Graziella*, pinkish; *Ranoneoule*,

shaded red; *Lais*, dark purple, and *Adonis* and *Argentine*, the best white sort.

The Horticultural Society showed *President*, the best purple; *Louis Piton*, a light pink; *Toulousin*, a fine French-white; *Lais*, dark purple; and *Pionella*, a small yellow.

There was also a collection of these Pompones in 32-pots, from Mr. Rosher, of St. John's Wood. I also saw cut-flowers of three very good Pompones, called *La Vogue*, a fine yellow; *Jonas*, a bronzy-orange; and *Mignonette*, a brown, small flower. All the above are now considered by the London growers as the cream of Pompones, and the Society have done us justice by holding their Meeting back, to give time for bringing out these very useful flowers at this dull season. I must leave the fruit till next week. D. BEATON.

FAILURES IN GROWING AND BLOOMING PLANTS.

(Continued from page 96.)

ACHIMENES.—4th. "I have a large quantity of Achimenes, but I cannot get them to grow and bloom, though I have potted them according to what is said in *The Cottage Gardeners' Dictionary*. I have not any bottom-heat."

I am rather surprised at this statement. But, perhaps, the *potting* was the chief thing the *Dictionary* was followed in; and I feel sure our correspondent is too experienced to expect success from adopting merely one point of a system to the neglect of others quite as necessary. I am quite at a loss to know how the gardener who grows Begonias, &c., so well, cannot get on with growing and blooming Achimenes. Many amateurs, and even cottagers, manage them well, with nothing to help them but a greenhouse, Vinery, or a rough concern of a Cucumber-box, to give them a start in. When growing them very early, a little bottom-heat is useful for starting the little and early tubers, but even then it is not at all essential. Our own are generally started in a Vinery, or Peach-house, or just in such heat as is necessary for the preserving and growing of the plants our correspondent has already referred to.

The ripening of these little tubers, however, and giving them a state of rest, are essentials to their growing and blooming freely. The very name of the genus is intended to denote its extreme sensitiveness to changes of temperature. I have found, however, that sudden alternations from shade to sunshine, and from a moist atmosphere to a dry one, affect most species and varieties more than a slight change of temperature. After the plants are grown to near flowering size, and the month of June has come, the plants will flourish extremely well in a greenhouse, slightly shaded, moist, and yet airy; and in a cold pit, with air always at back, but the atmosphere kept rather close and moist, by pouring water carefully on the floor, and not giving anything like the quantity of air that would be necessary for Heaths. With a slight shade, I have had these plants very fine for months, in a cool glass-covered veranda, shaded from the midday sun, and nice little plants in windows, in summer, shaded with a muslin curtain. I have previously mentioned how fine these plants looked in a cold pit at Wilderness Park, in July, but these were chiefly in small pots, for ease in moving and changing from place to place. The great thing is not to begin to start them too early, unless, in a plant stove, Vinery, Peachery, or forcing-pit, or frame, you can keep up an average temperature of from 55° to 60° at night, with a rise of 10° or 15° in sunny days. There is a little care requisite in starting them in dung-beds, as the smallest

portion of unhealthy or very confined vapour from the fermenting material will be sure to scald the leaves.

With these preliminaries, I shall just glance at a few of the minutiae of culture, in the hope that our correspondent and others, who have been disappointed, will have a more pleasing tale to tell us next season.

1. *Ripening*.—After blooming well for some time, the plant will begin to get the worse for wear, telling us unmistakably that "its mission" for that season is accomplished. We then naturally remove it from a prominent position. Now, this very season, I have frequently seen such plants kicking about in open places out-of-doors—the sun and the rain being allowed to contend for the honour of ripening, or of causing a second weakly growth. As soon as some of the leaves begin to wither and shrivel, and the blooms to be very thin, we should gently assist the plant to ripen gradually by placing it full in the sun, giving just as much water at first as would prevent shrivelling and flagging, and gradually lessening the quantity, until, as the leaves brown, the soil becomes quite dry. Now, for these objects, the *position* is a matter of first importance. Under a protection of glass, however rude the contrivance, is best, because there is no danger of rains. Next to that is close to a wall, or fence, facing the south, where the plants and pots may have the full force of the sun, and means easily adopted, such as a board or a slate, for throwing rains past the pot. In either of these positions, the pots should stand long after the foliage and stems are withered; in fact, until the cold nights of autumn would render their remaining longer dangerous; as it is safest, even when the tubers are in this dry state, not to expose them for long intervals below 45°.

2. *Resting in Winter*.—From 45° to a few degrees higher will be a very suitable temperature. A state of dryness should be continued, but the tubers will be all the better to be well covered with soil. I have kept them in the pots in which they grow, laid on their sides on a floor below a stage, or any convenient place; but, as that plan takes up room, and holds more pots in use than I can generally spare, I more commonly empty out every pot of one kind, especially where there are many of them, and place the tubers thickly in one pot, or in a shallow box, allowing them to remain in either receptacle until I wish them to start in growth in February, March, and April, just as I see that I can find a suitable place, and a suitable temperature for them.

3. *Growing*.—If left in pots, one pot or more is placed in heat, and in a couple of days or so is watered with clear water at from 70° to 80°; or the tubers are picked out, either from the pot or the store box, and laid on fresh soil in a shallow pan, and then covered with a little more soil. You will not have to wait very many days until their fresh stems begin to manifest themselves; especially, if, though giving no bottom-heat, you place a hand-light or bell-glass over the pan or pot, which will so far concentrate the heat. In either case, do not saturate the soil in which the tubers are placed until they begin to swell freely. A temperature approaching 60° at night, with a rise of from 10° to 15° and 20° in fine days, will grow them admirably. When the shoots are thus started from two to four inches in length, the tubers will be well rooted, and this is the time I prefer for potting in the flowering-pots; having previously secured good, well-aired and warmed soil, consisting chiefly of fibry loam and leaf-mould, with a little peat and silver-sand, and some dried nodules of old cow-dung placed over the drainage, consisting chiefly of charcoal and moss. I prefer this plan to putting the tubers in the flowering-pots before starting them, as you can better regulate the symmetry of the future potful, from being able to select the stronger plants for one pot, or for placing these systematically in the centre with weaker

ones all round. There is no rule for the numbers of tubers in a pot. I have had a fine-looking plant from one tuber in a 5-inch pot; a more massive display from six tubers in a similar pot; or a dozen or fifteen in a 12-inch; and some of my friends think nothing of a couple of dozen in a large pot; the chief thing for the grower to determine, being whether he will have a dense mass with the blooms chiefly on the *outside*, or the shoots so thin that the bloom on them may have room to expand all through the plant. However potted, they must now receive a fair portion of water at the roots, but none, or very little, over the foliage; and until the plants get strong enough to permit them to show bloom, they will be better from being slightly shaded, and then be inured to more direct light by degrees. When growing freely, a moist atmosphere is their delight. By blooming time, not only more light will be required, but more air and less moisture in the atmosphere will be demanded. If from dust or insects it should be deemed necessary to syringe the plants at all, the foliage should be dry before the sun strikes it with force. The green-fly will sometimes make its appearance, and if so, good shag tobacco should be used for fumigating, and weak doses given, and taking care previously that the foliage is dry. I have seen a whole pit of flourishing plants injured for the season by using a middling dose, for strength, of rough tobacco paper. Though, as I have stated, the plant will retain its bloom in a closish greenhouse in summer, yet, through the whole of its stages, blooming included, it delights in a closer and moister atmosphere than would suit the generality of greenhouse plants in summer.

5. *IXORA GRIFFITHII*.—"I have a good plant, which has sent up two new shoots; the wood seems well ripened, and one of the shoots appears to be growing again; I have not bloomed it yet, but hope to do so next year, as I have a pit-frame heated by hot-water, and a tank, upon the lid of which I hope to get sufficient bottom-heat for the purpose." We hope so, too. I have not grown *Griffithii*, but from its appearance, I presume it will require treatment similar to others in this splendid family. The well ripening of your shoots now is a great thing. It is doubtful if the starting of a new shoot now, be any advantage. The blooms, when they do come, have little of their usual brilliancy in the winter months. Preserving the plant in full health, rather than growing it, must now be the object. For this purpose, a dryish stove-plant-house, with an average temperature of from 54° to 60° at night, will be necessary; and though the plant must not be dry at the roots, the soil must be dryish rather than soaked. The water, in fact, must be regulated by the temperature, and the brightness or dullness of the weather. In a sunny day, a washing of the leaves will be attended with benefit. The flowers are produced at the points of the shoots; and for bringing them out in strong, large masses, nothing is so effectual as a little bottom-heat, by plunging the pot in sweet fermenting matter, such as dung and leaves, or tan in the spring of the year, gradually raising the pots as the flower-heads approach perfection, and giving them a rather drier atmosphere to bloom in. I have, however, seen very good flowers without the assistance of bottom-heat, but there is no doubt it yields an advantage, from whatever source it comes. That from a tank of hot-water will always be sweet and pleasant, and our correspondent may use it for starting many of his other pot-plants besides this *Ixora*; but for it and many other things, such as *Gardenias*, &c., I do not consider it at all equal to the bottom-heat from sweet, decomposing, fermenting material, the vapours from which supply not merely a moist, genial atmosphere, but an atmosphere loaded with fertilising gases. I have met with many, this last season, grumbling, that in their pits heated by hot-water pipes along the sides, they could get no

bottom-heat; when all they required was to tumble into one end of it a dozen barrowfuls of sweet dung and leaves, or a less quantity of tan, and shut this part off from the rest by a moveable wooden division. There is no difficulty in thus making as many different temperatures in a pit as you have lights. If, notwithstanding your care, the plant should not come up to your expectations in May, June, and July, the stronger shoots had better be cut back before Midsummer, so that the plant may be made more bushy; shift the plant, if necessary, when the young shoots have broken freely, using, chiefly, fibry loam and sweet leaf-mould, with a little peat and silver-sand; keep close for a few weeks; gradually give more air and full light, to ripen the shoots; keep dryish and cool in winter, and give a high moist temperature in spring, from 70° to 80°, and we hope you will be rewarded in 1856, though rather sanguine that you will not be disappointed in 1855.

6. *ÆCHMEA MINIATA DISCOLOR*, and *VRIESIA SPLENDENS*.—"These were recommended by a London nurseryman. Are they good things? In what number shall I find their culture?" To the last, I reply, that they have been frequently noticed. To the first, I reply, that they are very interesting indeed, being low-growing, tropical plants; very attractive, from their foliage, their flower-spikes, and the flowers themselves. It would be easy to write a short essay on each genus, especially if the species were all minutely described; and yet, when all was done, it would require some microscopic agency to find in what the chief difference in their required treatment consisted. You have, no doubt, seen young Pine-apple plants growing freely, and the nearer you approach the culture of them in your general treatment of *Æchmeas* and *Vriesias*, in a young state, the better you will succeed. Like the Pine-apple, each single shoot, or stem, only flowers once. When the flower-stem decays, and the plant is still kept in a growing heat, suckers will be thrown out at the base of the plant. These should be encouraged by water, and a moist, warm atmosphere, leaving the old stems to remain until they are half-grown, or nearly so, and allowing water to stand in the hollow of its leaves, if it does not become fetid. When the suckers get to that size, the old stem should be cut away; and now you make as many plants as you have suckers, by dividing them, and growing each in a five-inch pot or so, or by repotting the whole mass, be the suckers two or a dozen in number. It matters not whether single, or a number in a larger pot, each fresh stem, or sucker, that has grown, and received part of a ripening process this summer, will bloom early the next, or in spring, when the same process must be repeated. When growing, and approaching the blooming state, the retention of water at the base of the leaves will be an advantage rather than otherwise, unless it becomes fetid, when it should be dislodged, by turning the head of the plant topsy-turvy. No doubt, in its native jungles, the plant thus receives much of its necessary moisture from the collection of the heavy dew-drops. In winter, the plant should be oftener reversed, to get rid of this collected moisture. Keeping these matters in view, the following will include the main points of treatment.

1. *Potting*.—At all times, but especially when young, small pots should be preferred to large ones. Drainage must be particularly attended to; a good portion of that may consist of well-burned charcoal. The best time, after the first year, and the plant has bloomed, is when the suckers have grown some size, say from three to six inches in length. One potting, in a pot from four to six inches in diameter, will generally be sufficient for a young plant before it blooms.

2. *Compost*.—This should consist of nearly equal parts of fibry peat and leaf-mould not too much decomposed, lightened and made open with bits of charcoal and

silver-sand. As the plant increases in size, so as to form a specimen with many suckers, or stems, a little fibry loam, in pieces ranging from the size of a field bean to a walnut, will cause the flower-stems to come sturdier and stronger.

3. *General Treatment*.—After potting, a little bottom-heat will be serviceable,—such as a tan-bed, or any other decomposing material, with a temperature of 80°. Slight syringings overhead, with water of the same temperature, will also be an advantage. If a little water lodges in the axils of the leaves, so much the better; only it should not remain more than eight days without being changed. As autumn comes on the pot should be raised, bit by bit, for several days, out of the bark-bed, until it stands upon its surface, and is fully exposed to the sun. Any place, a shelf, or on a bed, will do for it in winter, commanding a temperature of from 50° to 60° at night, with a rise from sunshine, all the light possible, at this season, and just as much moisture as will keep the plant from shrinking away. In spring, the temperature should be gradually increased 10°, with a moist atmosphere in proportion, and though again, the plant would rejoice in a bark-bed, or a little bottom-heat, fine specimens of them have been procured from the open shelf of the plant-stove.

7. *ALLAMANDA SCHOTTII*.—"A country gardener blooms *Allamanda Cathartica* very well; succeeds with *Schottii*, when planted out in a plant-stove; but neither he nor his neighbours can bloom it in a pot; which seems very odd, when they read the reports of the London shows, and find it in almost every stand." Is the plant in the pot anything of the same age as the one planted out in a plant-stove? I do not, by any means, say that it is a rule without an exception; but as a general thing, this plant does not bloom freely until some three or four seasons old, from the cutting. I do not expect to bloom it well myself for some time, as my plant is very small, and my convenience limited; but some of my friends, who kindly make up many of my deficiencies, bloom it well, and almost as easily and profusely as *Cathartica*. Again, are the shoots of the plant grown in the pot anything so thin, and equally exposed to sunlight to the shoots grown in the plant-stove and planted out; or if as thin, are they anything as luxuriant? Strong shoots, with plenty of room between them for the leaves to expand, are better signs of success than many smaller shoots, and in a thick mass. I believe this correspondent knows all this quite as well, if not better, than I do; but as these matters are intended to be generally interesting, I will just mention the main points of culture, commencing from the present.

The plants should now, as soon as convenient, be subjected to a comparative rest, placing them in an open situation, giving them no more water than will keep them from flagging, and a night temperature, ranging from 50° to 55°. In a very sunny day, the leaves should have a slight dewing from the syringe in preference to soaking the roots. By midwinter, at farthest, the plant should be pruned. This operation should be regulated by the state and age of the plant. If young, and the wood tolerably ripe, and the shoots rather thin, little or no pruning will be required; but the shoots should be kept slowly growing in winter, and faster in spring and summer. In the case of older, well-established plants, pruning must be resorted to for giving room, as the flowers are produced on the shoots of the current season's growth, proceeding from well ripened buds on the shoots of the previous year. Some shoots may, therefore, be cut back to within a foot or two of their origin last year, and others to within a few buds. However cut, the leaves at the buds left should be preserved, and this, together with the roots having less to do, will swell, and so far ripen the buds left.

After remaining somewhat stationary for a shorter or longer time after pruning, a little increase in temperature and moisture will cause the buds to swell and break. A rise of from 10° to 15° may easily be given as the days lengthen in February and March, or night temperature of 65°, and day temperature from 70° to 80°. If now, and for some months subsequently, the plants can be plunged in bottom-heat from fermenting material of from 80° to 85°, so much the better. If *shifting* is required, it should be done when the young shoots are several inches in length, using aired and heated soil for the purpose. But in the case of large plants, they may remain several years in the same pots, if a little of the surface is picked out and fresh compost added as a surfacing. Of this surfacing, for giving strength to the shoots, a coating of old cow-dung or weak manure-waterings will be useful. The general compost for old plants of *Cathartica* should be chiefly fibry loam; but for *Schottii*, and another beautiful yellow *Paraensis*, a portion of heath-soil and silver-sand should be incorporated. When growing freely, if too many shoots are pushed they should be thinned. In summer, as the bloom-buds begin to appear, the pot should be gradually raised out of the bottom-heat if plunged, and more air and a drier atmosphere given. Some plants succeed very well without any bottom-heat, but most people will give it at the growing time if they can. I mention all this the more confidently, because I know several very successful growers who will kindly correct anything they deem to be erroneous, or who will as kindly supply any deficiencies.

A few other plants, not so pressing for immediate notice, must wait.

R. FISH.

YOUNG GARDENERS.

(Continued from page 43.)

In my last address to my young friends I directed their attention to Reading, and recommended various books as proper to be read and studied. Now, though by reading various books the mind is relieved, to a great degree, yet it is not wisdom to overburden the memory; and, therefore, I advise a change on the following evening. Let Tuesday night be devoted then to the art of Drawing. This being a more mechanical study, it is a very pleasant change. Like every other acquisition, it is, however, at first, a difficult one; and I may illustrate the difficulty by instancing the art of writing. We all recollect how hard it was, when the pen was first placed in our fingers, to make straight down strokes and fine up strokes, pot-hooks and hangers; but when the first difficulties were got over, how quickly and easy the pen ran through the lines of the copy book. So it is with drawing. I well remember a lady telling me, when I was young, that any young man that could write a fair running hand could easily learn to draw. So let not my young friends despair if their first attempts at drawing should be rough and rude, and unlike anything on earth or under the earth, so much so that you are almost tempted to give up the study, and say, "It is impossible for me to learn so difficult an art." The youth who does that will never make a first-rate gardener, that is certain. The rule with every one aspiring to be eminent in the profession, should be—Try again and again, and persevere; success is then certain. Remember the rule which the good old schoolmaster had painted over his school door, *What man has done, man may do*.

There are two branches of Drawing that are more especially necessary to a gardener; and they are, to be able to give a plan of a garden, combining the kitchen-garden with the flower-garden. The first is, comparatively, easy, and therefore the learner may attempt it first. Why is it easier? Because it is generally either

a square or a parallelogram. Now, to be able to give a plan of a kitchen-garden of either of the above forms, the artist should know how to draw a straight line and a right angle; simple things enough to a proficient, but requiring from a novice many trials before he succeeds in drawing the straight walls, straight walks, lines of forest trees, &c.

The plan of a flower-garden is much more difficult. In it there are flowing lines, circles, ovals, and all their combinations; yet the difficulties may be overcome by constant practice.

The other branch of drawing may be termed Garden Architecture, consisting of elevations of glass-houses, ground plans of the same, and rough sketches of Gothic arbours, seats, &c. The gardener who has, by diligent perseverance, acquired the power to give his ideas of the form of gardens, the elevation and ground plans of garden buildings, will be valued accordingly, and will always be sure of constant employ.

Drawings of plants and flowers may also be acquired, and would be useful; but I do not consider such knowledge indispensable. I rather regard it as an agreeable accomplishment, and a very pleasing recreation. Very few even eminent gardeners have attained any great proficiency in this branch of drawing. It is, in fact, a business of itself; and many men, and women, too, obtain a good livelihood by drawing figures of plants and flowers for the various botanical and horticultural publications of the day. I would not advise a young gardener to attempt this branch of drawing until he has acquired fully the power to give good designs of gardens and garden-buildings.

The articles necessary for a young student of garden-drawing, are a few sheets of cartridge paper, a good hard and soft pencil, a few erasers, a good ruler, and a case of drawing instruments. The last is the most expensive; but a very decent case may be bought, second-hand, for from ten to fourteen shillings, and the whole for about twenty shillings. By putting by a shilling a week, a young lad will soon be in possession of these, to him, very valuable articles; and until he, by rigid persevering economy, has saved such a sum, he may be practising the elements of drawing on any waste paper, with a pair of compasses, a ruler, and a pencil, or a good eraser. With these simple instruments he may copy a plan of a kitchen-garden, or ground-plan of a hothouse, or even a pit, that may fall in his way in any gardening publication. Attempt nothing, at first, but such as are easy to execute. In large garden establishments there are generally some young men or other who would be good-natured enough to direct the young aspirant how to begin to learn this pleasing and most useful art. The learner should never be above asking such to give him a lesson or two. Then let him attempt the drawing of a simple tool—a spade, for instance, or a fork, and, perhaps, a hand-glass, which last would show him the necessity of studying the art of perspective, or showing distances; that is, the side of the hand-light next to him should appear so on the drawing.

When he has acquired some knowledge of how to show on paper such simple things, so that he is quite sure his drawing of a spade will never be mistaken for a drawing of a hoe, he may attempt more difficult things, such as a drawing of a cucumber-frame, or a few simple shapes of flower-beds; but never to begin a new subject till he has accomplished the one in hand in a satisfactory manner, and in different positions; for instance, a cucumber-frame might be drawn without the glass; then with the glass upon it; and then, again, with the glass propped up, or drawn half off. All these different views will be excellent lessons, and will be found eminently useful as the youth advances in proficiency in the art. All that is needful is a steady hand, and a persevering mind bent upon improvement.

The best time to commence the study of drawing is the present. Supposing it is the very worst time of the year, winter, yet by the light of a candle some progress may be made, and by the time the days advance in length, the young man will have acquired a considerable amount of practice, so that he will be able, when the days are at the longest, to have at least two hours every week to advance his practice of the art, during the best of all light, that of the day. By that time he will have procured his full complement of drawing utensils, and may then attempt to draw more difficult things. He may then procure some cheap drawing-book, and copy the lessons, or examples, in it. It would also be a great help to him to spend a holiday, if ever he has one, in improving his drawings, or starting a new one. By thus seizing upon every extra opportunity, and diligently devoting every Tuesday evening to this pursuit, he would quickly acquire the power of showing on paper his improvements in this useful art. It would then be a source of great pleasure to him, besides the prospect of rendering him a more useful man, whenever he is fit to undertake the management of a place as head-gardener.

T. APPLEY.

(To be continued.)

WOODS AND FORESTS.

THE ASH.

(Continued from page 82.)

Use of the Ash.—It is used, when grown to the size of timber, by the coachmaker, to form the bodies of carriages; and by the carpenter, for earts, waggons, and wheelbarrows; also for the handles of all sorts of tools, such as pickaxes, hoes, and rakes; in fact, anything requiring toughness and elasticity. I have already referred to its uses, when grown as copse-wood, for hop-poles, and to make crates. I have seen, also, very clean-looking vessels made of Ash, for carrying milk to market; also neat kitchen chairs, which, when washed, almost became white, and seemed so clean that any lady, even in white garments, might have sat down upon them without fear of soiling her dress. The small branches make a clear, sweet fire. Where coals are scarce, Ash Pollards are very valuable for firing, and yield more wood for that purpose than any other kind of tree. The branches also make good charcoal, and the ashes of the burnt wood gives more potash than the Oak or the Willow. There is yet another use of the spray of the Ash, which, I believe, is not mentioned by any author, and that is, the cutting a quantity off, and throwing them down occasionally, for hares and rabbits to feed upon the bark during a severe winter, when every green vegetable is deeply covered with snow. Every game-keeper will thus provide for the animals which he is employed to preserve, and keep a stock of to breed the following season. The branches thus peeled by the denizens of the wood make excellent fire-wood, igniting the more readily for being divested of the moisture-preserving bark. For stakes, the Ash is objectionable, as it rots so quickly in the ground. The bark may be, and indeed is, used for tanning, and is, or has been, used to dye stuffs yellow.

The above various uses to which the Ash is put thus proves my first assertion, that it is, next to the Oak, our most valuable indigenous timber-tree.

In America, there is a species different to our common Ash. It is named *Fraxinus Americana*, and is as equally valuable as our native species, indeed, it surpasses it in hardness. The difference consists in the seeds being smaller, the leaves narrower, and the bark whiter. It grows quickly, and thrives best in similar soils and situations, as the common species of this country. Seeds

of it may be procured of the seedsmen that import American seed, generally, or plants may be purchased cheap enough at any of the large nurseries.

Propagation.—The seeds of the Ash are produced in bunches on the previous year's young shoots, flowering in May, and ripening in October. They hang on the trees a considerable time. I noticed some, this year, that had not dropped in March. They should be gathered as soon as they are ripe, and pitted the same as nurserymen do the seeds of the Hawthorn, only not so thick. Ten inches or a foot will be sufficient. Cover them with ashes or sand, and let them lay to rot off the covering bark till March.

Preparing the Seed Beds.—The ground should be in an open place, so as not to draw the plants up weak. It should be of moderate quality. If too rich, the seedlings would grow on so late in the year that their tops would be destroyed by early frosts, and thus the plants would be useless. Dig deep the spring previously, and take off a crop of some smothering vegetable,—late Potatoes, for instance. Then, in autumn, dig it up in ridges; and in some dry weather, a fortnight or so before the sowing time, level down the ridges with one of Park's five-steel-pronged forks (one of the best tools ever invented). Then again, in March, choose a time when the ground is dry to sow the seeds.

The best way to sow them is in drills. The old broadcast system has, happily, gone out of fashion, at least, to a considerable extent. The drill method has several advantages; the chief are, the ground between the drills can be hoed during the summer, and shallow dug with a narrow spade in the autumn, thus keeping the ground clear of weeds, and open to receive the benefit of the weather. The young trees, also, grow stouter, and are less liable to mildew. Draw the drills, with a triangular-shaped hoe, about an inch deep. If the quantity to be sown is large, one man should draw the drills; another drop in the seeds; and a third, follow on with a rake to cover them in.

Sow thin. There is nothing gained by sowing thick, and the space of ground to grow a great number of seedlings is by no means large. The plants will appear about the middle of May, and are liable to be eaten off by slugs. A few dustings of quick-lime, at intervals of a week, will certainly protect the young, tender plants, and kill their deadly enemy whenever it falls upon him. The trees will soon grow out of danger. Other enemies are hares and rabbits; they are particularly partial to young Ash, and, therefore, the space devoted to raising seedlings should either be walled round (the most effectual protection), or a close wire fence, at least two feet and a half high, should surround the spot.

During the summer, the hoe should be used as soon any weeds appear; they should never be allowed to grow beyond the seed-leaf. Any that may appear in the rows of seedlings, should be carefully plucked up by hand, and as soon as the leaves fall, they may be dug in, and the care will be over till the weeds appear again in the spring.

Transplanting.—In these seed drills the plants may remain two years. Then take them all up, and sort them, separating the large ones from the small. Transplant them into a piece of good ground, using the spade only for that operation; indeed, the roots will be so large and numerous, that it would scarcely be possible to plant them with a dibber. Plant the larger size in rows fifteen inches apart, and a foot apart in the row. The smaller size may be planted nine inches apart in the row; here they may remain two years, and then the larger size will be fit to plant, either to form timber-trees or copse-wood. The lesser size will require another year before they be ready for their final situation.

T. APPLEY.

PEAS.

THERE are few crops of more consequence than a crop of Peas; for, next to Potatoes, there is no vegetable that is in reality a more general favourite,—a dish of Peas forming as agreeable an adjunct to the table of the wealthy as it does to that of the poor man; and, like the Potato, the manner in which it is prepared by both is nearly alike, neither of them deriving any benefit by any substance they may imbibe or be charged with whilst undergoing the cooking process; so that it is not unusual for the poor man's Potatoes and Peas to be as well prepared as those of his richer neighbour. But, leaving that duty to the constituted authorities in such matters, the season has now arrived when a something must be done in the way of providing for the wants of another year; and the advantage of having a dish of early Peas is such as often forms a sort of rivalry between neighbouring growers, and any means that could be adopted to hasten the period of their usefulness would, doubtless, be regarded by all as a boon to the community; and, in trying to effect that object, our seed-growers, or those by whom they act, have issued, from time to time, several so-called earlier varieties than any that ever before preceded them; and although the greater portion of them are mere repetitions of old, well-known kinds, yet, as they often possess some little merit, it may be inferred that, if they are “not improvements,” they are preventives to that degeneracy which all varieties are liable to run into when not renewed by something as good as they were themselves in their younger days.

Now, it would be useless here entering into the various names by which early Peas have been issued to us; suffice it to say, that the most useful section for standing the winter are the Whites, they being more hardy than the Wrinkled, or Green varieties, which are sown in more favourable seasons; nevertheless, a few of some good, useful, intermedial kind, might be sown now as well, especially where the desire is to try experiments, or attempt novelty. For instance, the *Champion of England* is an excellent Pea, and might probably endure our winter very well, as it seems hardy and bears well; in fact, I regard it as the most useful Pea we have for general summer cropping. However, it would be well also to sow the largest breadth of some good early white sort, of which there is no lack of names, and probably some of the latest introduction may be as good as any other, or, probably, a shade better than some that may have degenerated. One thing, it would not be advisable to trust alone to one kind that has not been sufficiently tried, for the chances are, that it may not turn out well; but, if you are determined to trust to one kind only, it is better to let that be an established good one than an uncertainty. The growers for the London market—whose practice ought not, by any means, to be despised—grow only one or two sorts, and, until the last few years, these were the *Early Kents* and the *Scimitar*; the first-named for early crop, the latter for second; and the success that attended them was such as entitled them to some consideration; and, as we have over and over again been told that a bag of *Early Kent* Peas is capable of being transformed into half-a-dozen different sorts, having each high-sounding names, we need not be surprised at the reluctance our agricultural friends have at purchasing such costly goods as are their old friends, the *Kents*, when transferred into paper-bags, emblazoned, perhaps, with some motto derived from antiquity, and the whole thing trumpeted forth in a way that would make it appear as if its patron regarded it of more national importance than even our naval or military defences, much as their services are at the present time called into requisition. However, it is not fair to condemn all such new intro-

ductions, for we now-and-then have decided acquisitions, or, rather, we have such means taken as prevents a degeneracy; for, be it observed, that such a thing must take place if means be not taken to prevent it. Now, the enthusiastic grower who, observing a single stem of a Pea amongst others of its class that exhibits signs of superior excellence by coming into use sooner, filling its pod better, and probably being of better flavour; I say, the grower who notices these things in a single Pea, and marks it for seed, and by carefully sowing and noticing the same another year, and comparing it with others, finds it still pre-eminent, it is only right to give that individual his full meed of praise; for, be it remembered, that is the only way that really new kinds are obtained, and all the ingenuity of the world cannot obtain them by any better means; at least, there is no better way of obtaining them; for few cultivators will take the trouble and interest in hybridising them by artificial means the same as they would a Geranium or a Fuchsia. However, as has been said, now-and-then an improved variety is obtained, and the main cropping section, which follow the earlier ones, are certainly much improved of late years, as well in quality of Pea for table as in habit of plant; but the best sample of *Early Frame*, which were the only useful kind known some half-century ago, came into use nearly as early as any kind now in use.

In the sowing, and after-management of the earliest crop, some few points must be kept in view, and the rest is all plain work. A south border is usually allowed for this crop, and in sowing, care must be taken to eradicate as many of that arch-enemy to delicate crops, the slug, as can be done, by digging in a liberal quantity of lime, soot, or mortar-rubbish, or any other substance distasteful to them, so that the ground may present as little attraction to them as possible; if the ground be very wet at sowing time, and likely to keep so, it is better to sow the crop as the digging proceeds, taking especial care that the drill in which the seed is deposited is composed of fine, fresh, friable earth, which ought to be brought from a distance, if none is to be had in the ground, and a mixture of lime, soot, or ashes, would be advisable; as it is not unusual for these pests of vegetation to retreat into the rough earth, after having devoured the better half of the ground's produce, and if their retreat should be by the side of a stem of a young Pea, they would find food for some time without again stirring out for it, and the crop would be annihilated in consequence. It is not bad practice, in ground where much damage is done by the slug, to cover the row up with Barley-chaff, after the seed is covered with earth, the rough points of the awns of Barley is at variance with the well-being of the slug; besides which, it shelters the plant very much. Other enemies there are, in the shape of rats or mice, for which trapping seems the only cure; but that must be begun in time, otherwise, if they once get a taste of the Peas, they will not be easily kept away. Birds of various kinds, also, make a prey of them when they can; these, too, must be prevented doing mischief to a crop that continues a long time in that state of infancy, which subjects it to many disasters; however, in a general way, these evils may be got over, and a crop of Peas sown the middle or end of November will seldom fail to furnish their produce in due time, in May or June, next following, except in such cases as that of the spring of 1853, wherein some severe weather in February and March, after a very mild period of weather, caught the Peas, and many things else in that too-far-advanced condition, which is at variance with their hardihood; but as none of us are aware what sort of a winter we are entering on, we cannot do better than sow as before, and again at Christmas, so that if the first crop fail, there is a prospect of the next succeeding.

It has been said above, that a south border is best for this crop; it is also proper to observe, that the seed ought to be sown thicker than is usually done at other times, and the amateur who is at a loss to know which of the many kinds a seedsman's list contains to sow, had better confine himself to one or two well-known kinds, as the *Early Kent*, *Sangster's Number One*, or *Emperor*, as they are all good, and more likely to be genuine than some having newer names; drills, or rows about four feet apart, will do very well for this early season, and but little attention is required after they are sown, save to see that no depredators come in the way; but these are most troublesome just as the Peas are coming up—even mice seem to prefer them at that state. The protection that may be necessary to give them at a later period will be noticed then; suffice it to say, that they are never safe from such enemies as those mentioned above until they are nearly in flower, and then only between that period and that of producing pods; for the latter often become the prey of one of the enemies of the seedling plant,—birds; but the remedy in both cases is the same.

J. ROBSON.

THE FLUKE POTATO.

I AM glad to see, from repeated reports in your paper, that this valuable variety is at last becoming properly appreciated by the public throughout the country; and as it is too generally considered a very new variety, I think that a brief sketch of its history may be acceptable to your readers.

It is admitted to have been raised by a poor cottager, J. Turner, residing at Middleton, near Manchester, and it is gratifying to know, that the gentry and farmers in that neighbourhood have rewarded the successful grower by a testimonial handsomely subscribed to. It is now some eight or ten years since the variety was raised, and it has slowly, but surely, been making its way all over the country. The Scotch farmers were amongst the first to discover its value; some few sets being sent as a present to the Land of Cakes, brought a host of buyers the following season. I well remember, about four years ago, that I had great difficulty in obtaining sets, owing to the Scotch farmers having made a clearance of all in the neighbourhood, at from £1 2s. to £1 10s. per load. It has found its way to the southward more slowly; for though I offered to make presents of sets to two or three of the leading seedsmen in the south, they declined, with thanks, as it was not considered that the produce would be saleable to their customers.

The Potato in question is supposed to be a cross between the *Lapstone Kidney* and the *Pink-eye*, and is remarkable for its singular shape of a flattened oval, frequently eight or nine inches long, and two to three inches thick; the peel is thin, and remarkably free from eyes; the foliage of a very dark green; it is very hardy:—I do not consider it very excitable, and should not recommend it for early forcing; indeed, it is considered a late Potato, and it is found to cook better after Christmas than before. Many farmers do not offer their stores of it for sale until February. The sets must be planted whole, and it has hitherto been found to have escaped the disease; where it has been attacked has been in the vicinity of other diseased crops, or from parties using their own sets on the same ground. And, lastly, let me recommend your readers who love a mealy Potato roasted in its jacket, to try the *Fluke* in that way, and they will at once own its supremacy.—W. X. W.

[We hear, from another source, that Turner gave the stock to a friend, who increased it, and large quantities were grown by the neighbouring cottagers for their own use, which excited the attention of the farmers. In 1847 the farmers planted a few—these did so well that they were generally saved for seed, and in the spring of 1848 they were found so sound in the pits, that they were planted in increased quantity, and gave general satisfaction, both in produce and quality—having been found to resist the disease is a great measure, when all other sorts around were a complete failure. In 1851 they were purchased up for seed, and in the spring of 1852 the price for seed advanced

from £1 10s. to £2 per load of 552 lbs., at which price all were sold. In 1853, in Lancashire, where they were very extensively grown, as also in the neighbouring districts, they maintained their superiority and celebrity for yield, quality, and freedom from disease; and at the Ratcliffe Agricultural Society's meeting a sample was exhibited, not for competition, but so much were they admired and approved, that the committee awarded a silver medal, value £5., to old John Turner, by whom they were raised. The money subscribed for him exceeded £100, with which an annuity was purchased; but he lived to enjoy it no more than a few months.]

DEVON AND CORNWALL POULTRY SHOW.

THIS was held at Plympton, in connection with the South Hams Agricultural Society's Exhibition, on the 3rd instant. There were 154 pens. The *Ducks* and *Dorkings* were particularly good. Many pens were sold. The Exhibition was visited by some thousands of persons. The whole of the birds were sent off the night of the show day. A great deal of the success is due to the indefatigable manner in which the chief arrangements had been carried out by the honorary secretary, Mr. William Hunt.

THE PRIZE LIST.

JUDGES FOR POULTRY, &c.—Chas. Ballance, Esq., Taunton; W. W. Rowe, Esq., Milton Abbot, Devon; A. P. Prowse, Esq., Plymouth.

SPECIALLY FOR PIGEONS.—D. Matthews, Esq., Plymouth.

DORKING.—For the best Cock and two Hens.—First prize, Mr. Richard Branwell, solicitor, Holsworth, Devon. (Coloured.) Second prize, Mrs. Seale, Blackawton, Totnes, Devon. (White.)

DORKING CHICKEN.—Best pen of three Chickens of 1854.—First prize, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol, Somerset. *Highly Commended*.—Mr. Richard Branwell, solicitor, Holsworth, Devon. (Coloured.) *Commended*.—Mr. Edward H. Scobell, Abbey Mead, Tavistock. (Coloured.) Mr. Henry Holman, Mannamead, Plymouth. (White.)

SPANISH.—For the best Cock and two Hens.—First prize, Mr. Richard Branwell, solicitor, Holsworth, Devon. Second prize, Mr. B. J. Ford, Ide, near Exeter.

FOR BEST PEN OF CHICKEN OF 1854.—First prize, Capt. H. M. Ellicombe, R.N., Cumberland Cottage, Exeter, Devon.

BUFF OR CINNAMON SHANGHAE.—For best Cock and two Hens.—First prize, Mr. S. C. Parkhouse, Bedford-street, Plymouth, Devon. Second prize, Mr. S. C. Parkhouse, Bedford-street, Plymouth, Devon. *Highly Commended*.—Mr. R. E. Moore, Pennycomequick, Plymouth, Devon.

FOR THE BEST PEN OF THREE CHICKEN OF 1854.—A prize, Mr. S. C. Parkhouse, Bedford-street, Plymouth, Devon. *Highly Commended*.—Mr. R. Edward Moore, Pennycomequick, Plymouth, Devon. *Commended*.—For two Pens.—Mr. Henry Lucas Bean, Ashcott, Glastonbury, Somerset.

PARTRIDGE SHANGHAE.—For the best Cock and two Hens.—First prize withheld. Second prize, Mr. B. J. Ford, Ide, near Exeter.

PARTRIDGE OR DARK SHANGHAE.—For the best pen of Chicken of 1854.—A prize, Mr. R. Edward Moore, Pennycomequick, Plymouth.

MALAY.—For the best Cock and two Hens.—First prize, Miss Fanny McDonald, Lympstone, Devon. Second prize, Mr. William Hunt, Caroline-place, Stonehouse, Devon.

FOR THE BEST PEN OF CHICKEN OF 1854.—First prize, Mrs. Isaac Kent, Caroline-place, Stonehouse. *Highly Commended*.—Mr. William Hunt, Caroline-place, Stonehouse.

REN GAME.—For the best Cock and two Hens.—First prize, Mr. William J. Little, Anderton House, Cornwall.

REN GAME CHICKEN.—For the best pen of three Chickens of 1854-5.—Prize, Mr. Robert Baker, Ermington, Devon. *Highly Commended*.—Mr. Paul Ourry Treby, Goodamoor, Plympton. (Black-red.) Prize, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol, Somerset. (Black-red.)

GRAY GAME.—For the best Cock and two Hens.—First prize, Mr. William Greenwood, Fore-street, Devonport. Second prize, Mr. W. J. Little, Anderton House, Cornwall.

FOR THE BEST PEN OF CHICKEN OF 1854-5.—Prize, Rev. Charles Thomas James, the Vicarage, Ermington, Devon. *Commended*.—Mr. William J. Little, Anderton House, Cornwall.

OTHER GAME.—For the best Cock and two Hens.—First prize withheld. Second prize, Mr. Paul Ourry Treby, Goodamoor, Plympton. (Pyles.)

FOR THE BEST THREE CHICKEN FOR 1854-5.—Prize, Mr. Paul Ourry Treby, Goodamoor, Plympton. (Pyles.)

SILVER-PENCILLED HAMBURGH.—For the best Cock and two Hens.—First prize, Mr. Francis Henry Aberdeen, Honiton, Devon. Second prize, Mr. Charles Richard Titterton, Snow Hill, Birmingham. *Commended*.—Mr. James E. Marshall, Belmont, Taunton, Somerset.

GOLD-PENCILLED HAMBURGH.—For the best Cock and two Hens.—First prize, Mr. Henry Gibson, Little Saltram, Plymouth. No second prize.

SILVER-SPANGLED HAMBURGH.—For the best Cock and two Hens.—First prize, Mr. James P. Hine, Thickthorn House, near Ilminster, Somerset. Second prize, Mr. Thomas McCann, Graham House, Malvern.

GOLDEN-SPANGLED HAMBURGH.—For the best Cock and two Hens.—First prize, Mr. Thomas McCann, Graham House, Malvern. No second prize.

GOLD POLAND.—For the best Cock and two Hens.—First prize, Mr. James Bryant, jun., Ridgeway Lodge, Plympton, Devon.

SILVER POLAND.—For the best Cock and two Hens.—First prize, Mr. James Bryant, jun., Ridgeway, Plympton, Devon. Second prize, Mr. James Bickley, Plymouth Inn, Ridgeway, Plympton.

BLACK BANTAMS.—For the best Cock and two Hens.—Prize, Lady Katherine Parker, Saltram, Plympton.

GOLD-LACED BANTAMS.—For the best Cock and two Hens.—First prize, Rev. Grenville F. Hodson, Banwell, Somerset. Second prize, Mr. J. G. Gully, Queen-street, Exeter.

SILVER-LACED BANTAMS.—For the best Cock and two Hens.—First prize, Rev. Grenville J. Hodson, Banwell, Somerset. No second prize.

TURKEYS.—For the best Cock and two Hens.—First prize, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol, Somerset. (American.) No second prize.

TURKEYS.—For the best Chicken of 1854.—First prize, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. Second prize, Mr. John Grant, Blackawton, Totnes.

WHITE AYLESBURY DUCKS.—For the best Drake and two Ducks.—First prize, Mr. B. J. Ford, near Exeter. Second prize, Mr. R. E. Moore, Pennycomequick, Plymouth.

ROUEN DUCKS.—For the best Drake and two Ducks.—First prize, Mr. John Marshall, Belmont, Taunton. Second prize, Mr. B. J. Ford, Ide, near Exeter.

DUCKS, AND NAMED VARIETY.—For the best Drake and two Ducks.—First prize, Mr. Edward Rahhige, Austin Farm, Egg Buckland, Devon. (Common Ducks.) Second prizes, Mr. John Marshall, Belmont, Taunton. (Black East Indian.) Miss Selina H. Northcote, Upton Pyne, near Exeter. (Wild Ducks.) *Highly Commended.*—Mr. Edward Rahhige, Austin Farm, Egg Buckland, Devon. (Common Ducks.)

ANY NAMED VARIETY.—Equal prizes.—Mr. John Marshall, Belmont, Taunton, Somerset. (Brahma Pootra.) Mr. Richard Branwell, solicitor, Holsworthy, Devon. (White Cochins-China Chickens.) Prize, Mr. W. Hunt, Stonehouse, Devon. (Ptarmigan or Turkey Fowls.) *Commended.* Mr. Richard Banwell, solicitor, Holsworthy, Devon. (White Cochins-China.)

CARRIERS.—For the best pair of Birds.—Equal prizes, Mr. John Chalker, Catherine-street, Plymouth, Devon, and Mr. W. Greenwood, Fore-street, Devonport, Devon.

FOR THE BEST BIRD.—Mr. John Chalker, Catherine-street, Plymouth.

ALMOND TUMBLERS.—For the best pair of Bird.—Mr. W. Greenwood, Fore-street, Devonport.

FANTAILS.—For the best Pair.—Equal prizes, Mr. John Marshall, Belmont, Taunton, Somerset; and Miss Selina H. Northcote, Upton Pyne, near Exeter. *Commended.*—Mr. Thos. Michelmore, junr., Berry, Totnes, Devon; and Rev. Grenville F. Hodson, Banwell, Somerset.

JACOBINES.—For the best pair of Birds.—First prize, Mr. Chas. Bluett, Taunton. *Commended.*—Miss Selina H. Northcote, Upton Pyne, near Exeter, Devon; and Mr. Charles Richard Titterton, Snow Hill, Birmingham.

POUTERS.—For the best pair of Birds.—First prize, Mr. Charles Bluett, Taunton. *Commended.*—Mr. Charles Richard Titterton, Snow Hill, Birmingham.

TRUMPETEAS.—For the best pair of Birds.—First prize, Rev. G. F. Hodson, Banwell, Somerset. *Commended.*—Mr. Francis F. Bulteel, solicitor, Plymouth; and Mr. Charles Richard Titterton, Snow Hill, Birmingham.

RUNTS.—For the best pair of Birds.—Mr. Charles Bluett, Taunton, Somerset.

BARBS.—For the best pair of Birds.—First prize, Mr. Henry Adney, Lympstone, Devon. *Commended.*—Mr. C. Bluett, Taunton, Somerset.

OWLS.—*Commended.*—Mr. C. R. Titterton, Snow Hill, Birmingham.

TURBITS.—For the best Pair.—First prize, Mr. C. Bluett, Taunton. *Highly Commended.*—Mr. C. R. Titterton, Snow Hill, Birmingham.

PIGEONS OF ANY NAMED VARIETY.—Equal prizes, Miss Selina H. Northcote, Upton Pyne, near Exeter, Devon. (Magpies.) Rev. G. F. Hodson, Banwell, Somerset. (White Dragons.) *Highly Commended.*—Mr. C. R. Titterton, Snow Hill, Birmingham. (Porcelain.) *Commended.*—Mr. H. Adney, Lympstone, Devon. (Archangels.)

THE POULTRY MEDAL.

GENTLE Reader! didst thou ever see a silver poultry medal? If so, thou art more fortunate than many honorary secretaries I knew, and committee-men by the score; also hundreds of breeders of capital prize poultry, who, to this day, are in blissful ignorance that such *rara aves* are in existence.

Being in my own person an exhibitor of some years standing, and it having been my good fortune to obtain a fair share of first-class prizes, it is my invariable custom to claim medals from those societies which can award them, in preference to the current coin of the realm, which would soon slip through my fingers, and vanish—

“Like the haseless fabric of a vision
And leave not a wreck behind.”

Medals, large and small, granted by the Birmingham Society,—venerable mother of all poultry shows,—are well known, and anxiously sought after by successful exhibitors; for to possess a pen of birds which has taken honours in that arena, where competition is so severe, through the best poultry in the kingdom being sent to contend for prizes, is something to be proud of. Hence the high estimation in which a Birmingham prize-medal is held.

The practice of giving poultry medals is now adopted by some other societies, but is not so generally known as it ought to be. I wish the uninitiated to understand it is ever optional with them to take their prize in money or a medal; also, that some societies now give bronze medals for second class prizes. Many exhibitors like to possess these remembrances or trophies of their success, whereon is engraven a name, which, with other family honours, may, perchance, be handed down to posterity, and placed side by side with future medals of Alma and Sebastopol.

Most poultry medals are neat works of art, being got up with considerable taste and skill. The shape resembles a watch of the larger size; in general, the obverse consists of a splendid group of prize poultry in frosted silver; on the reverse, is a wreath of varied design, for each society adopts a different one to make the greater variety in appearance, agreeable to the expressed desire of many collector of poultry medals. Thus, Taunton shows a circle of Oak-leaves; Devon and Cornwall has a beautiful entwinement of leaves from the Bay, with its fruit; and Wellington (Somerset), that town the Duke loved to honour by taking its name, has a pleasing spray of ears of corn. Around the wreath is cast, in bold relief, the name of each society, with the year of its being established; and, as aforesaid, the inner space is left *plain* for the owner's name to be *engraved*, and the variety of poultry which gained the prize; a glass covers both sides to protect the delicate work from injury, and thus the medal is presented entire in a neat morocco case.

In bringing forward the subject of poultry medals for the first time in the columns of THE COTTAGE GARDENER, I hope it may lead to a better acquaintance with them, if not to their more general adoption; being convinced, that the more they are circulated, the more it is to the advantage of all poultry exhibitions.—RIGHT.

HALF-HARDY ANNUALS.

THE following are a few of the Half-hardy Annuals that are free-growers, free-bloomers, and continue to grow and flower up to the end of the autumn.

Since the days of Douglas, and others, our seedsmen are enabled to put into our hands long lists of these very pleasing plants for us to select from, and in some of these lists the sorts are marked whether hardy, half-hardy, or tender; and also the heights and colours of the flower are stated. All this is just as it should be; and some of our seedsmen mention in their lists even which are the proper months for sowing each species. Notwithstanding, many over-anxious amateurs will be busying themselves in sowing annuals in pans, pots, or boxes, without either being guided by their seedsmen's list, or their own books—cramming their frames, their pits, and the platforms in their little greenhouse with such unsightly things that never need occupy these structures at all.

To warn our readers against this, we will observe, there are two main seed-sowing seasons with us gardeners, namely, spring and autumn; but in the case of annuals, say the months of April and August are generally the best. The August sowing to produce plants for early spring and summer bloom; and the April sowing for late summer and autumn blooming. Now, I scarcely know of a hardy annual but what will stand the inclemency of our winters as well as a Turnip, and very many of these might be raised from no other than self-sown plants, to be transplanted with the dibble, or trowel, in the

spring months, after the borders are dressed off. Otherwise, there is always some bye-place or other to be found in every garden to sow a few seeds of any kind, or many kinds, for transplanting at some future season.

The half-hardy kinds, of course, must remain until a proper time in the spring, and these need not be allowed to occupy the valuable space which ought to be for other things. A very slight or gentle hotbed should be made about the second week of April. The bed may be quite level on its surface; that is, as high at the front as at the back, and four bits of board nailed together and placed thereon in form of a common frame, so as to keep up the earth round the margin of the bed. The earth should be from six to eight inches thick all over the bed; and in this any kinds or number of kinds may be sown of the half-hardy annuals, to be covered with the common hand-glasses, or an odd frame-light or two, which can be readily taken off every fine day after the plants are all up. Thus may be raised a stock of strong, healthy plants, which may then be potted off into small pots, three or four in a pot, as soon as large enough. In these pots they may have a slight protection, which is a better way to establish them for final planting out in the beds or borders than that of transplanting them from the seed-bed into their final places. The plant from the pot is already established, and no shading is required, nor any care but that of well planting in the spot where the plant is to remain to grow and flower.

Among the following kinds will be found most of those which need the above kind of treatment:—The *Zinnias* may justly be considered among some of the best of them; and years ago we used to think much of the old scarlet kinds called *Zinnia tenuiflora*, *Z. pauciflora*, *Z. multiflora*, *Z. verticillata*, and, of course, *Z. elegans*; but now, the *Z. elegans* has given rise to so many superior varieties that one scarcely ever hears of the other species. That last-mentioned furnishes us with fine large blossoms of almost all colours, from pure white to the deepest scarlet; and no plants form more beautiful beds, or bunches, for the mixed borders, rising from two to three feet high, flowering freely during the late summer and autumn months, and delighting in a good, light, rich soil. We should never think of planting out these choice half-hardy annuals in the open beds or borders until the end of May, or the beginning of June, and then keeping a keen eye upon them until they are well established.

The *African* and *French Marigolds* are always much esteemed as being very showy plants, though they are not pleasant smelling things. They are free growers, and very free flowerers. Of these the *Tagetes patula*, or Spreading *Tagetes*, which is commonly called the French Marigold, has many beautiful varieties of double and single flowers of red and yellow striped, pure yellow, deep red, and other colours. They form showy bunches in beds or borders.

Of the *African Marigold* (*Tagetes erecta*, Upright-growing,) are two good double varieties, namely, the double Orange, and the double Lemon-coloured. These rise one-and-a-half to two feet high, and form beautiful beds or bunches in the mixed borders.

Calliopsis, or *Coreopsis tinctoria*, is still one of the best of this family. It has two or three varieties, namely, *C. tinctoria*, var., *atropurpurea*; *C. tinctoria*, *atropurpurea*; *C. Atkinsonii*, and *C. Drummondii*. All are delightful, showy plants, rising about two feet or two and-a-half feet high.

Chrysanthemum coronarium, the garland Chrysanthemum, has a variety called "The new Golden," of which the blossoms are deeper yellow. The plant is a free grower, rising from two to three feet in height, and a free bloomer. Another species, called *C. tricolor*, is a much dwarfer plant, but a free flowerer, and requires the same treatment.

Carthamus tinctoria is an old inhabitant of our gardens, now seldom seen, although it is pretty and curious. Like all the before-mentioned, it is a free grower and bloomer, rising about two feet high, and forms an interesting bunch in the mixed borders.

Xeranthemum annuum, or purple Xeranthemum is a most elegant plant. It is a kind of everlasting flower. There is a white variety which is equally pretty. These are free growers and rising one-and-a-half to two feet high. They are abundant flowerers, and very useful in forming nosegays.

Elichrysium bracteatum, or Yellow Everlasting *Elichrysium*.

This is a most desirable plant, rising from two to three feet high, flowering freely, and is extremely pretty. There is a light-coloured variety of this equally beautiful, and, like the above, useful in making nosegays.

Ageratum Mexicanum is a very pleasing plant, and a profuse bloomer. Its blossoms are of a delicate light blue colour.

All of the above-mentioned are called half-hardy annuals, and require near about the same treatment, may be all sown the same day, and upon the same gentle hotbed, and all may be finally planted out on the same day, if time, &c., permit at the proper season. They are all showy flowers of long duration.

The *China* and *German Asters* are, generally, treated like the above, as half-hardy annuals; although with us, in the south of England, the natural soil, in an open south border, answers quite as well for their seed bed, and from which they may be transplanted even when in full flower.—T. W.

THE PALM TRIBE.

THE Palm-trees of the warmer portions of the globe render important and increasing services to mankind. Of this class are the Palms which produce the Palm oil, the Cocoa oil, and Cocoa-nut, the Date, &c., &c. The Palms which grow so luxuriantly in the equatorial regions of the earth diminish in size and in beauty as we approach the temperate regions. What may be called the true Palm climate, possesses a mean annual temperature of from 74° to 84° of Fahrenheit (that of England is only about 50°). It flourishes with great luxuriance in South America; in Asia it grows with less vigour; Africa contains a region known as the country of the Date Palm.

The Guinea, or Oil Palms, *Elaeis Guineensis*, and *E. melanococca*, from which the Palm oil is procured, are now extensively cultivated in Central Africa, and so profitable is this modern branch of commerce become, that it has tended materially to render the employment of the native population so profitable to the slave-holding chiefs, as to make them reconciled to the almost entire destruction of the Slave trade.

This oil is extensively used in the making of soap, and other manufacturing purposes. It is the yellow substance with which the wheels of the Railway carriages are oiled.

In the year 1850, 448,589 cwt. of Palm oil, were imported into this country;—

In 1851	..	608,505 cwt.
" 1852	..	523,231 cwt.
" 1853	..	636,628 cwt.

The East Indian correspondent of *Bell's Weekly Messenger*, has described, in a late number, some of the uses of other varieties of the Palm-tree.

"As I was strolling one morning, down a lonely lane, near the village of Chatteer, pondering over a book I had in my hand, I observed a smart, cleanly clad Mussulman youth, reclining under the shade of a bubbool tree, playing a native air on a *sitar*, which he supported on his knee, and accompanying the chords he struck with what I considered at the time to be an invocation to his absent mistress. The words he uttered were to the following effect—"Oh, come hither to me, my fondest, and repose with me under the shade of this beautiful tree. The honey bee is busy in collecting its sweets, which sweets shall be thine. Or retire with me, to yonder grove of leafy Palms, and whilst I woo thee, list you to the tender lamentations of the bewidowed dove whilst he breathes forth his plaintive note in the cadence of disconsolate despair." Submitting the spirit of the above little aspiration to the English metre, in which attempt I cannot do justice to the original version, I herewith subjoin the same—

"Oh! come with me to the bubbool tree,
Oh! fondly come and repose with me,
And list to the hum of the errant bee,
As it strays through these bowers,
Amid the gay flowers,
Whose nectarine showers
Shall light on thee.

"Or to yon grove, where the tell-tale dove,
Emmourns his mate in a strain of love,
Bewailing his fate 'mid the Palms above;
There concealed let us woo,
In constancy true,
As the bird we hear coo,
Thence reluctant to move."

"The particular Palm to which the minstrel drew my attention was the *cajour*, or Date-tree, which thrives luxuriantly in the tropics. The fruit that it produces must be too well known to need a description of it in this place. In Syria and Arabia, and other countries of Asia Minor, the Date fruit arrives, when at maturity, to a greater state of perfection than it does in more sultry latitudes. When the bark of this Palm is pierced it emits a copious discharge of a white saccharine fluid, which closely resembles metbeglin or mead in flavour. The same, if permitted to stand for some time, exposed to the air, rapidly ferments, and if indulged in freely produces intoxication. The common turtle dove (*Turtur aldrovandi*) for the most part selects this particular Palm wherein to construct its nest and carry on the duties of incubation. A large variety of ornithivorous snakes, continually on the watch for squirrels, birds, and such animals as are wont to resort to this umbrageous Palm, take advantage of its inviting properties, and the heedless tenants of its welcome branches thereby too frequently fall, unconsciously, unsuspecting victims to the wily craft of the serpent's stratagem. The *turkool*, or Fan Palm, is so denominated from the near resemblance the leaves of this tree bear to a fan, and as the above little toilet accompaniment first found its way into this and other vernacular countries from the East, so it is highly probable that it owes its origin to the existence of the 'Fan Palm,' inasmuch as the leaves of the latter tree, when rescinded, reduced in size, and dried, are commonly used in eastern climates for agitating the air in close apartments, thereby producing a succession of smart currents of the atmospheric medium. The fruit of the *turkool* is like a pomegranate, and ripens in February and March, at which season, when the nuts are tapped, the same afford a liberal supply of an agreeable flavoured juice, which, if taken in the mornings, fasting, is said to operate advantageously on patients who are labouring under scorbutic ailments. The same, if suffered to ferment like the former, proves of a highly intoxicating nature, and is used by the natives as a substitute for yeast in the manufacture of bread. This Palm has been received under the distinctive name of the Ivory Palm, on account of the nuts which it produces, when perfectly ripe, and subjected to the skilful lathe-craft of the the turner, evincing a hard, compact, and beautifully white enamelled appearance, possessing the complexion and character of ivory, inasmuch that it would puzzle a person of no ordinary share of discernment to detect the difference between the actual animal and the vegetable proximate *eburnine* resemblance. The *toparra areca*, or Beetle Palm, is cultivated very generally throughout the tropical districts of India proper. It is of stately growth, and like the rest of the genus is destitute of lateral branches, but determines in a vertical tuft of long graceful leaves, like those of the Cocoa Palm. The nut, when ripe, is about the size and of the shape of a horse chesnut, exceedingly hard, and when cracked and exposed to view presents to the eye the aspect and appearance of a fractured nutmeg, being interlaced with white veins throughout a light brown ligneous substance. The above nut possesses a very stringent property, and is used by the natives of both sexes in the character of a sialogue. The same, when introduced into a clear charcoal fire, calcined, and afterwards triturated finely in a mortar, is adopted by the better order of natives as a dentifrice, and possesses the properties of whitening the enamel of and preserving the teeth. With slaked shell lime, catechu, and cardamum seed it is incorporated with the leaf of the paun plant, which forms an indispensable feature in the domestic economy of a native establishment in India."

THE MINIATURE FRUIT-GARDEN.*

The *sixth* edition of this very useful book upon a most interesting subject is now before us. There is much that is new in it, and deserving of general perusal. The following are examples:—

ROOT-PRUNING OF PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

Before entering on the subject of root-pruning of pear

trees on quince stocks, I must premise that handsome and fertile pyramids, more particularly of some free-bearing varieties, may be reared without this annual, biennial, or triennial operation. I have a large plantation of pear trees on the quince stock, which bid fair to make very handsome and fertile pyramids, yet they have not been root-pruned, neither do I intend to root-prune them; but I wish to impress upon my readers, that my principal object is to make trees fit for small gardens, and to instruct those who are not blessed with a large garden, how to keep their trees perfectly under control; and this can best be done by *annual*, or at least biennial, attention to their roots, for if a tree be suffered to grow three, or more years, and then root-pruned, it will receive a check if the spring be dry, and the crop of fruit for one season will be jeopardised; therefore, those who are disinclined to the annual operation, and yet wish to confine the growth of their trees within limited bounds by root-pruning—say once in three years—should only operate upon one-third of their trees in one season; they will thus have two-thirds in an unchecked bearing state, and those who have ample room and space, may pinch their pyramids in summer, and suffer them to grow to a height of fifteen or twenty feet without pruning their roots. I have seen avenues of such trees in Belgium really quite imposing.

Pyramidal pear trees on the quince stock, *where the fruit garden is small*, and the real gardening artist feel pleasure in keeping them in a healthy and fruitful state, by perfect control over the roots, should be operated upon as follows:—A trench should be dug round the tree, about eighteen inches from its stem, every autumn, just after the fruit is gathered, if the soil be sufficiently moist; if not, it will be better to wait till the usual autumnal rains have fallen; the roots carefully examined, those inclined to perpendicular growth cut with the spade, which must be introduced quite under the tree to meet on all sides, so that no root can possibly escape amputation, and all the horizontal roots, except those that are *very small and fibrous*, shortened with a knife to within a circle of eighteen inches from the stem,* and all brought as near the surface as possible, filling in the trench with compost for the roots to rest on; the trench may then be filled with the compost; well-rotted dung and the mould from an old hotbed, equal parts, will answer exceedingly well; the surface should then be covered with some half-rotted dung, and the roots left till the following autumn brings its annual care. It may be found that after a few years of root-pruning, the circumferential mass of fibres will have become too much matted, and that some of the roots are bare of fibres towards the stem of the tree; in such cases, thin out some of the roots, shortening them at nine inches or one foot from the stem, this will cause them to give out fibres, so that the entire circle of three feet or more round the tree is full of fibrous roots near the surface, waiting with open mouths for the nourishment annually given to them by surface dressings and liquid manure.

Thus far for the gardener, who does not mind extra trouble, who, in short, feels real pleasure in every operation that tends to attain his end; but it is not every amateur gardener that can do this, nor is it always required in the south of England, except for small gardens and in rich moist soils, in which pear trees are inclined to grow too vigorously, but with our too often cool, moist summers in the northern counties, annual root-pruning is quite necessary to make the trees produce well-ripened wood; in other cases, as I have before observed, shortening the shoots in summer, taking care to produce a handsome pyramidal form, and if they are inclined to grow vigorously, occasional (say biennial or triennial) root-pruning with the spade will be quite sufficient.

The following will be found a good selection of Pears for pyramidal trees on quince stocks. These things may be planted in rows, five or six feet apart, or a square may be allotted to them, giving each plant five to six feet, which will be found amply sufficient for root-pruned trees. Some few esteemed sorts of pears do not grow well on quince stocks, unless "double-worked," *i. e.*, some free-growing sorts are budded on the quince, and after having been suffered to grow for one or two seasons, those not so free growing are

* The Miniature Fruit Garden, or the culture of Pyramidal Fruit Trees; with instructions for root-pruning, &c. By T. Rivers, of the Nurseries, Sawbridgeworth. Longman and Co., 1854.

* If they have not spread to this extent the first season, or even the second, they need not be pruned, but merely brought near to the surface and spread out.

budded on them. For twelve varieties, placed in the order of their ripening, the undermentioned may with safety be recommended* (in the following lists, varieties marked thus * may be chosen by those who require only a few trees).

1. Doyenné d'été*	July
2. Bonne d'Ezée	August
3. Bon Chrétien (Williams)*	September
4. Baronne de Mello*	October
5. Fondante d'Automne	October
6. Louise Bonne of Jersey*	m. & e. October
7. Alexandre Lambrè	Nov. and Dec.
8. Beurré d'Arenberg*	December
9. Beurré Sterkmau*	e. December
10. Zéphirine Gregoire	January
11. Josephine de Malines	March
12. Bergamotte d'Esperen*	April and May

For twenty-four add—

13. Saint Denis	August
14. Beurré Superfin	September
15. Colmar d'été	September
16. Beurré Hardy	October
17. Doyenné Gris	e. October
18. Duchesse d'Angoulême	b. November
19. Urbaniste	e. November
20. Winter Nelis*	December
21. Beurré d'Anjou	e. December
22. Bezy d'Esperen	January
23. Prince Albert	March
24. Prevost	April

The above succeed on the quince, and form well-shaped, excellent pyramids.

PROPER DISTANCES FOR PLANTING PYRAMIDAL AND OTHER FRUIT TREES.

Pyramidal pear trees and bushes on quince stocks, root-pruned for small gardens, four feet apart.

The same in large gardens, not root-pruned, six feet apart.

Pyramidal pear trees on the pear-stock, root-pruned, six feet apart.

The same roots, not pruned, eight to ten feet, the latter if the soil be very rich.

Horizontal espalier pear trees on the quince stock for rails or walls, twelve feet apart.

Upright espaliers on the quince stock for rails or walls, four to six feet apart.

Horizontal espaliers on the pear stock for rails or walls, twenty to twenty-four feet apart.

Pyramidal plum trees, six feet apart.

Espalier plum trees, twenty feet apart.

Pyramidal apple trees on the paradise stock, root-pruned for small gardens, four feet apart.

The same, roots not pruned, six feet apart.

Espalier apple trees on the paradise stock, fifteen feet apart.

The same on the crab stock, twenty to twenty-four feet apart.

Peaches and nectarines for walls, fifteen to twenty feet apart.

Apricots for walls, twenty feet apart.

Cherries, as bushes on the Mahaleb stock, root-pruned for small gardens, four feet apart.

The same roots, not pruned, six feet apart.

Espalier cherry trees on the Mahaleb, for rails or walls, twelve to fifteen feet apart.

The same on the cherry stock, twenty feet apart.

Standard pear, apple, plum, and cherry trees, for orchards, twenty feet apart.

THE PEACH TRELLIS OF THOMAS WHITE, ESQ., MANOR HOUSE, WEATHERSFIELD, ESSEX.

In the autumn of the year 1851, Mr. White, while walking through the grounds, happened to see my small Kerrian trellis with moveable lights, and on his return home the idea occurred to him that it might be enlarged, and the principle improved upon, so as to be able to grow fruit enough for a large family. In the autumn of that year

† All the varieties recommended for pyramids may also be planted as espaliers to train to rails in the usual mode.

he accordingly built a trellis-house of the following dimensions:—

Length	80 feet.
Width (inside)	12 feet.
Height at back	8 feet.
Height at front	14 inches.
Rafters (fixed twenty inches apart)	14 feet long.
Trellis (fifteen inches from the glass)	13 feet wide.
Sunken path in centre	2 feet deep.

The front and back plates both rest on larch poles about four or five feet apart; a shutter, twelve inches wide, on hinges, forms with a slip of board the front wall. The back wall is made with long faggots of brushwood—a double row; the ends are boarded up, and a door is at each end. Perhaps no gardening structure was ever built so cheaply, and none ever produced such marvellous effects. The trees, dwarf and standard trained peaches and nectarines, two or three years trained, twelve of the former and six of the latter, were planted in February, 1852; and this season (1854), only the third year of their growth, they have given 5,000 *peaches and nectarines*. On one tree of the Noblesse Peach there were 500 peaches, and the same number or more on a tree of the Ebruge Nectarine. This seems enough to ruin the health of the trees, and so I thought when I heard of it; but when I saw the excessive vigour of the trees, I thought Mr. White and his gardener not so far wrong in allowing them to bear such an enormous crop. The dwarf trees have reached to the top of the trellis, and cover it so completely, that the standards must be removed this autumn.

Mr. White was, I believe, offered the sum that the house cost him—somewhere about £40—for his crop of peaches and nectarines. The vigour of the trees is quite astonishing; the stems of some of them are twelve or more inches in circumference; they are planted inside the front shutter, and laid directly on the trellis. The remarkable success of this simple structure seems owing entirely to the perfection of its ventilation; the front shutter has been open night and day in warm weather, and the air passes gently and constantly through its brushwood back wall, so as entirely to prevent stagnation. The trees have been syringed regularly night and morning, and are in the finest possible health. As this brushwood wall is unsightly, and dangerous in some situations owing to its capability of harbouring rats and mice, we must now see what can be substituted for its perfect ventilating property. Hedges to lean-to houses, as I know from experience, are too cold to ripen peaches and nectarines, although highly favourable to the growth of the trees; it therefore appears to me that the perforated bricks, now largely manufactured, could be used with advantage in this way. The wall, eight feet in height, should be built five feet high from the ground with common bricks; and then, three feet up to the top for the plate to rest on, with perforated bricks placed edgewise; in very cold weather in March, when the trees are in blossom, a curtain of calico, or any other common material, might be arranged so as to cover this space of the perforated wall at night, and in May it may be removed for the summer. This perforated space, with the front shutter constantly open, will, in my opinion, be perfect for a peach trellis, and not unsightly.

It will be seen, from what I have said, that Mr. White's trellis differs from Mr. Ker's in this way,—the roof is fixed, and not of removeable lights; the trees are pruned and the fruit is gathered from underneath, so that all the operations of culture are performed under shelter, and in a climate at all times favourable.

THE FOOD OF FRANCE, AND ENGLAND.

In a recent tour in France, we could not but remark the profusion of fruit and vegetables with which the markets were stocked. The simple fare of the lower classes consisting mainly of them and of bread. The large proportion of vegetables employed in their skilful cookery was also strikingly apparent.

Since our return, in considering these widely different habits of the French and English population, it seemed desirable to contrast, by accurate statistical returns, the amount of food consumed by each nation. This was some years since attempted by Sir Charles Lemon, (*Journal Royal*

Agricultural Society, Vol. I., p. 414.) who carefully contrasted the returns from twenty-one departments of France with the information collected by McCulloch and others with regard to England; he remarks:—

"The quantity of potatoes grown in these departments is much greater than I expected to find it. The consumption per head is about a bushel-and-three-quarters for each person. The fallow lands were about four millions of acres, being in proportion to the land under tillage for grain somewhat more than as 4 is to 10.

"Of artificial pastures there were $1\frac{1}{2}$ millions of acres. The artificial grasses have been cultivated in these provinces for a great length of time; but the Duc de Cazes told me, in 1822, that when he first turned his attention to farming, no artificial grass whatever was cultivated anywhere south of the Loire, and that it was hardly known by name in those provinces. The population of the twenty-one departments amounts to 8,545,412 persons; and the grain of all sorts annually consumed by them is equal to 7.7 bushels per head.

"Colquhoun calculated that each person in England consumed, on the average, annually, one quarter of wheat; or where other grain was eaten, in proportion of $1\frac{1}{4}$ of barley, $1\frac{1}{2}$ oats, or $1\frac{1}{4}$ of rye to a quarter of wheat.

"The consumption of wheat in these departments, compared with other grain, was as 5.32 to 2.35; and, reducing the 7.7 bushels before-mentioned, to the standard of wheat, in the proportion in which the different grains are consumed, it will appear that each person in the north of France consumes very little more than what is equal to 7 bushels of wheat per year.

"This is much below the consumption of grain in this country, and at variance with the supposed habits of the people. And as the quantity of butchers' meat consumed by them is also less than in England, it is difficult to understand how they are fed. I believe that garden produce forms a material part of their diet.

"What the French call the animalization of the departments is shown as follows:—

Cattle	2,628,924
Sheep	6,764,107
Pigs and Goats	1,399,599
Horses	974,918
Mules and Asses	99,660

"Of these, there were consumed for butchers' meat in the course of the year—

Cattle	1,055,026
Sheep	741,546
Pigs and Goats	1,378,736

"The whole weight of the above was about 184 millions of kilogrammes—equal to about 406 millions of pounds, or 3,625,000 cwt. The consumption, with reference to the whole population, was about 48lbs. of meat for each person.

"At the end of this paper I have given the best estimate which I could form of the consumption of butchers' meat in this country. It is far too vague to be brought into comparison with the French returns; but its evidence, as far as it goes, seems to show that the consumption per head is, annually, about 92 lb., exclusive of pig meat."

The average weight of animals sold in London is per carcass—

Bullocks	800 lbs.
Calves	140
Sheep	80
Lambs	50

Supposing that these severally weigh about one-seventh more than the average of the kingdom, the weight of the whole will be as follows:—

Cattle slaughtered in England and Wales (according to McCulloch)	1,305,000
Deduct Calves (one-tenth)	130,500
	<hr/>
	1,174,500
Bullocks, &c. 1,174,500 multiplied by 6 cwt.	7,047,000
Calves . 130,500 " 1 "	130,500
Sheep . 5,402,161 " $\frac{3}{4}$ "	3,376,000
Lambs . 1,400,000 " $\frac{1}{2}$ "	700,000
	<hr/>
	11,253,500

—C. J.

QUERIES AND ANSWERS.

GARDENING.

VANDA MULTIFLORA.—VANDA ROXBURGHII.—
AERIDES AFFINE.—SOWING LILIUM LANCIFOLIUM.

"I have a large plant of *Vanda multiflora*, and not being able to find it either in *THE COTTAGE GARDENER* or *Cottage Gardeners' Dictionary*, I should like to know whether it is worth growing, or fit only for the rubbish-heap. Also, whether I may expect any bloom next year from *Vanda Roxburghii* and *Aerides affine*, about six inches high, with six or eight leaves. By answering these you will oblige.

"When is the right time for sowing *Lilium lancifolium* seed, saved this autumn?—A YOUNG ORCHID-GROWER."

[*Vanda multiflora* is a noble foliaged plant; but the flowers are small. If your collection is not very large, you might keep it till you required the room it occupies. *Vanda Roxburghii* has flowered when only the size you mention, though it is not usual. *Aerides affine*, if rightly treated, flowers freely when six inches high, with six or eight leaves on the plant. All air plants from India should be grown in a moist, hot air, during the summer months; but to flower them well they should be kept dry and comparatively cool during the short days of our winter. Summer temperature, by day, 85° to 95°, by night, 65° to 75°; winter temperature, by day, 60°, by night, 52°. By keeping up the above temperatures, according to the seasons, your Indian orchids will grow robust and flower freely.

The seed of *Lilium lancifolium* should be kept in a dry, cool place till February; then sow it in a light, rich compost, rather thinly; that is, allow each seed to have a quarter-of-an-inch square; cover the seed a quarter-of-an-inch, and place the box or pot in which it is sown in a cold frame. Water slightly at first, and when the plants come up give plenty of air and increase the water. Let them remain in this box or pot, kept dry and cool through the winter, then carefully pick out the small bulbs and repot them in 5-inch pots, four in a pot, close to the side. They will make good bulbs this second year, and many of them will flower the third season; but they ought to be potted singly the third spring in 5-inch pots; and when the shoots have made a foot or more in growth, a top-dressing of very well-decomposed dung will be of great service to the young as well as old bulbs. It is well known these Lilies put out most freely young roots from the stems above the bulbs; and if this rich top-dressing is applied just when the roots begin to appear, the roots will strike into it, and the plants will thrive and grow much finer.]

CYLINDRICAL BOILERS FOR HEATING FORCING-HOUSES.

"My employer having erected a couple of forcing-houses, wishes for information concerning the portable cylindrical boilers. I have inspected some, but I have seen none of them in use. The length of the houses are thirty-five feet, and the breadth about twelve feet. We were thinking of having a flow and return round each house, and a boiler to each also; but before he purchases the cylindrical boiler he would be extremely obliged if you, or any of your correspondents, could give the result of their experience of them.—J. Y., *Enfield*."

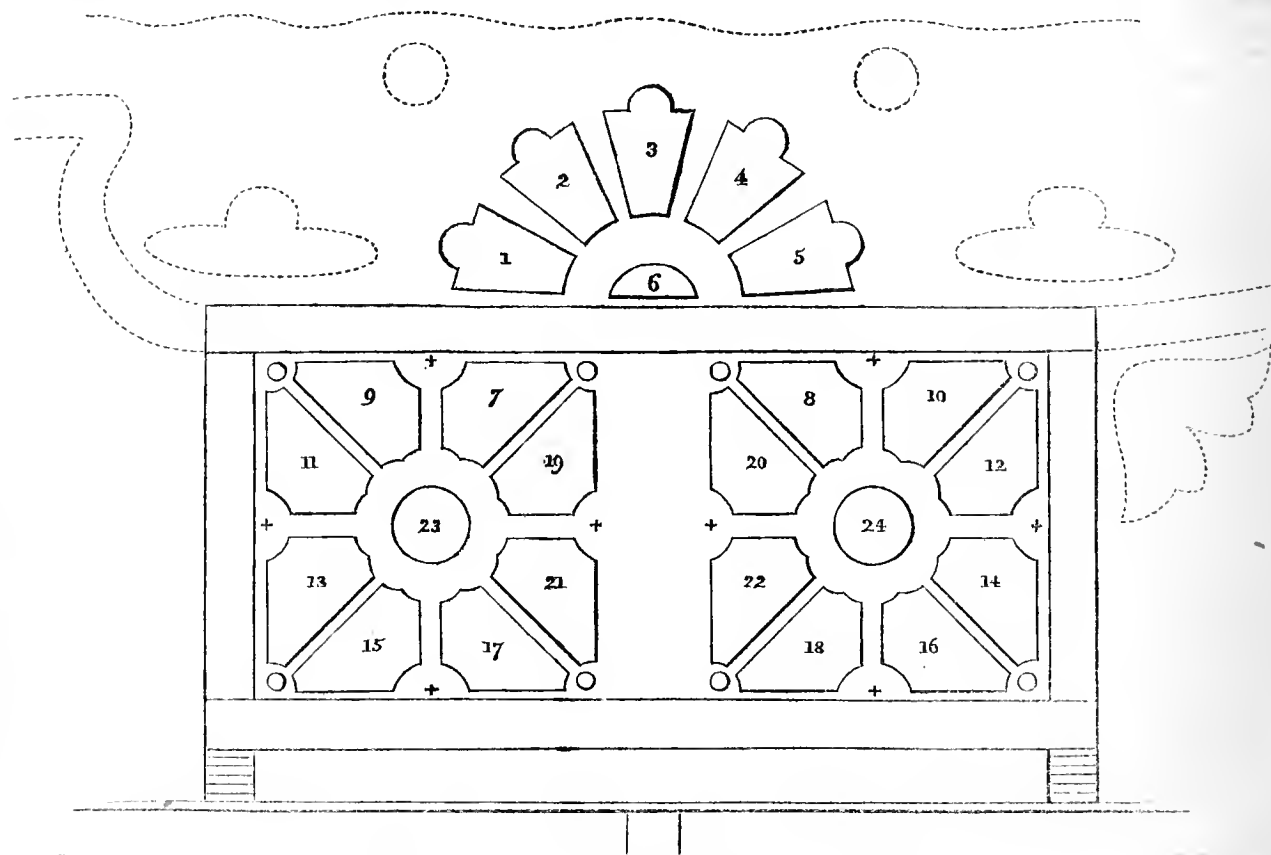
[You do not give a very clear description of the houses you propose to heat with portable cylindrical boilers. Are they each thirty-five feet long and twelve feet wide? If so, for the forcing-house you require ranges of four pipes, two for the flow and two for return, or you will not have heat enough to force Vines, &c. We know a house, thirty feet long and ten feet wide, heated by a cylindrical boiler eighteen inches deep and fourteen inches wide, and a flow and return pipe three-and-a-half in diameter. In this house is grown exotic Ferns, and some stove plants, but the heat in severe weather is not sufficient, and the owner will be obliged to add another range of pipes to give out more heat. We have no doubt that cylindrical boilers for small houses, one to each, will answer well, providing there is plenty of piping. We shall be obliged by any of our readers communicating the result of their experience.]

THE PRIORY FLOWER-GARDEN, ARGYLESHIRE.

"Having some time ago lost my gardener, without the immediate prospect of replacing him, I am obliged to take the management of my own garden, and shall be very glad of some hints regarding the planting of a parterre, which I have under the sitting-room window. I send you the plan of the garden, which I endeavour always to arrange so as to have it full for several months in the year; but I find it difficult to arrange it, as in this climate, which is mild and wet, being on an arm of the sea, with little frost or snow, but exposed to frequent storms, the *later* spring and summer flowers are not over before the greenhouse plants are ready to turn out, and these, if put out before the end of May, though they do well that month, are apt to run to leaf in

autumn, instead of blowing a second time. The *early* bulbs, such as Crocuses, are as early as in England. I have had edgings of these bulbs, but they are apt to come up thinly and irregularly, and to be eaten by mice under ground; would you recommend me to plant tufts of them in each corner of the beds? Do you approve of an upright evergreen shrub in the middle of the beds? and would plunging pots of some flowers, instead of turning them out, prevent their growing so luxuriantly?

"Geraniums, Salvias, Verbenas, Heliotropes, Petunias, Calceolarias, all do well here, out of doors, until the end of October; and Fuchsias, the *Bicartonii*, and Hydrangeas, grow to a very large size, with scarcely any protection in winter, and all the American shrubs thrive admirably.—A LADY."



GARDEN AS IT HAS BEEN PLANTED THIS AUTUMN.

- 1 & 5 Scarlet Geraniums.
- 2 & 4 Blue Salvias, pegged down.
- 3 Pink Variegated-leaved Geraniums.
- 6 White Ivy-leaved do.
- 7 & 16 Heliotrope.
- 8 & 15 Petunias and Heartsease.
- 9 & 18 Calceolaria amplexicaulis and Integrifolia.
- 10 & 17 Enothera Missouriensis, and Linum flavum.
- 11 & 12 Convolvulus minor, 2 shades.
- 13 & 14 Scarlet Verbenas.
- 11 & 21 Verbenas, of sorts.

- 20 & 22 Geraniums, of sorts.
- 23 & 24 Roses, with tall Standards in the centre.

In the eight corners are low standard Roses surrounded with dwarf Annuals such as Mesembryanthemum tricolor, Portulaccas, Nemophilas, Sedum azureum, Double Nasturtium, &c.

There is a wicker border under the low terrace, the wall of which is covered with Noisette and Macart-

ney Roses, and the garden is bounded next the sea by a belt of Rhododendrons and Fuchsias; a covered walk of pillar Roses, planted, according to the recommendation in THE COTTAGE GARDENER, with three Roses, a climber, a standard, and a dwarf to each pillar, leads to a fruit garden, which is surrounded by a border of mixed flowers, including Hollyhocks, Dahlias, and standard Roses.

[Your garden is very pretty indeed, and we have engraved the geometric parts, without the out-lying shrub-beds, &c. Irish Yews, not higher than your eye, when you sit in the drawing-room, would not be objectionable in the beds of the squares immediately below the terraco; but none to be in 1, 2, 3, 4, 5, and 6. But you have better places than the beds for upright evergreens, in the middle of the half-circle entrances, which we have marked with crosses. The only way of overcoming the over-luxuriance of the plants, from climate, in the autumn, is to have the beds shallow, ten inches to a foot, and the six bottom inches of that to be of the poorest materials; or else to plunge the plants in their pots; also, by using *very old* Geranium plants, whose tops and roots have

been so stumped for six or seven years, as that they go easily into a 32-sized pots. We prefer Crocuses in distinct patches, or in beds. The reason of your edgings of Crocus going off so, is not so much from soil, climate, and mice, as from your own hands; after they go out of flower, their leaves grow so much as to annoy you by covering other things, then the Rob Roy spirit comes on you, or rather that of Helen Macgregor, and you cut their heads off! Poor Crocuses get often thus served, and in time they get thin and irregularly patchy.

You manage the planting of the garden very well indeed, as it is so much below the eye; but the same arrangement would not answer so well on the level. The only alteration

we would make, would be to change 10 to 18, and 18 to 10; then 17 and 18 would be of the same height and colour, which is very desirable in front beds like these; then, 15 and 16 ought to be of the same plant, or same colour. We would have the two *Heliotrope*-beds next the house, and the two *Petunia*-beds in 8 and 9; but if you like it better, the *Heliotropes* may be in 8 and 9. The off group, from 1 to 6 is uncommonly well managed; it is nearly as the "Dolphin Garden," at Shrubland Park, which used to be planted exactly on your plan, though not always of the same colours, No. 3 being the "shot-silk bed.]"

SOWING AUSTRALIAN SEEDS.

"Having received a few wild flower seeds from a friend in Hobart Town, I am at a loss what to do with them. They were collected, for the most part, on Mount Wellington, in the neighbourhood of the town. I take it for granted that they must lie over till spring, and then be sown in a hotbed, or some artificial heat; but, perhaps, you may be able to suggest the most eligible means for growing them.—W. B."

[You will be very likely to raise some good greenhouse plants from the seeds from Mount Wellington, but nothing new to our collections. If you have a greenhouse and a Cucumber bed next spring, you might sow these seeds at the end of January, in one-half peat and the other half of any light garden soil, and just cover them and no more with the same soil; then water them, and put the pots into the frame, and when the seedlings look as if they were growing too fast, remove them to the greenhouse, and put a hand-light over them on the stage, for the first ten days, so that the change from the hot frame will not be too sudden or severe. Without some such good accommodation, the middle of March will be soon enough to sow them. When lots of seedlings want *amateur* attention, we repudiate the nurseryman's plan altogether; he puts every tiny morsel in thimble-like pots, and he has skilful hands and eyes to know how many times a day these pots want water, shade, and attention; and before you could say whether they would live or die, his customers begin to buy them, and then see how convenient it must be to have them all in single pots; but you and we do not want to part with our seedlings, neither can we give up our calling to attend to so many little botherations; then, to save time and trouble, we transplant a dozen young seedlings into one *nursing pot*, and the dozen will not require one-fourth the attention of a single seedling in a thimble or thumb-pot, for the next six weeks, and by that time, those seedlings which grow fast will be big enough for another shift into single pots. The way we used to deal with seedlings from the temperate parts of the world was this—sow part of them the moment they arrived, if that was before August, and keep the rest till the spring; if many came up of a sort, we made choice of 4, 5, or 6, of the best of them, and put the rest, "three and three," into small pots, for turning out into the open borders by the end of next May. Strange seedlings tell what they are likely to be much sooner by this planting-out than by keeping them all in pots; meantime, some one may call, and know what the seedlings are when he sees them growing so naturally; and if some of them happen to be very good, we used to take them up and pot them early in September, but, first of all, the roots would be cut round a week or ten days before taking up, and if the leaves drooped from too much cutting, a good watering or two would restore them. However, it was for the purpose of pointing out the vast trouble of first putting seedlings into thumb pots that we took up this subject at such length.]

PROPAGATING THE EVERGREEN OAK AND CYDONIA JAPONICA.

"I should be glad if you could inform me which is the best way of increasing the *Evergreen Oak*. I have several stumpy trees which have made a nice lot of young shoots this summer. Can I strike them from cuttings, layers, or how? I should also be glad to know the best way of increasing the *Pyrus japonica*. I have an old plant of it, and am anxious to raise some young ones.—RALPH CAMERON."

[You can only increase your *Evergreen Oak* from acorns, in the usual way, by sowing them now or in March.

The *Pyrus*, or rather *Cydonia japonica*, is easiest increased from cuttings of the roots in February—pieces six inches long, and as stout as a pen-holder, make nice plants; cut them, top and bottom, with a square cut, and plant them in any good garden ground, and let the top of the cuttings be just level with the surface, and no more. Some put an inch of sand along the top of these cuttings, and then wash it into the soil among the cuttings with a rose water-pot—not a bad plan, certainly. Of course, you know that all root-cuttings ought to have the earth pressed close to them, as much so as if they were cuttings from the branches.]

HEATING GREENHOUSES BY A FLUE.

"I have a small greenhouse, twelve feet by five, built of wood, except the back wall, eight feet high. Last year I tried to keep my plants with a patent stove, but that cooked most of them. So this spring I built a small furnace and flue, having only the top on a level with the floor for about nine feet, so that there is not much heating surface exposed. I, however, thought it would be quite enough, till the other night. When I tried it the temperature was 40° inside; the fire raised it to 50°. The outside temperature was 38°. Query, would the same heat keep it at 45°, or thereabouts, with an outside temperature of 15°, or so?"

"Alongside the greenhouse is a frame five feet square, with one side opening into the greenhouse. Will the heat that it will draw from the greenhouse be sufficient to keep out the frost without covering?"

"I do not know if there is anything new in my way of keeping *Fuchsias*; I make a box two feet square, and fourteen inches deep; I fill it up about six inches with broken bricks and rubbish; over that a layer of shavings. I then take the plants from the border, or wherever they may be, with the earth about their roots, and pack them as close as they will go. My box holds about forty. Last winter several in pots died, but not one in my box, which goes under the stage, and takes up very little room.—T. PRO."

[1. Greenhouses built of wood are quite as warm as those made of brick, provided the wood is thick enough, or there is a vacuity between two layers, and that filled with sawdust.

2. Your flue we presume will be sufficient. As to elevating, there is little necessity for that, as in such a narrow space it would be in the way. Cannot you have hollow spaces at each side of the flue, either communicating with the atmosphere, or the tiles, with which we presume your floor is covered?

3. A similar heat will not keep your house at 45°, when the outside is at 15°; but a similar heat long continued might do so. Hence, in severe weather, you might want a fire for two-thirds of the twenty-four hours, instead of for an hour or two, as we presume you tried at, and obtained 50°, when the external temperature was at 38°. For greenhouse plants, we would not advise continued fire-heat, if we had the outside long at 15°, so as to keep up 45° at night; but for reasons fully explained some time ago, we would prefer a little covering of some sort or another.

4. We presume the frame would also be sufficiently heated, and more especially if you divided the opening into two equal spaces with a board, above and below, as that would give you a rapid circulation. Here, also, we would throw on a mat in a severe night.

5. There is nothing new in the mode of managing *Fuchsias*; but it is a very useful plan for keeping such plants with little trouble.]

BEST MODE OF HEATING A GREENHOUSE.

"What is the best mode of heating a greenhouse of about thirty-three feet long? I have read all the different plans in your publication, until I am quite puzzled at the various plans, quite contradictory, therein advocated. You would be doing great service to the generality of your readers, if you would give your opinion as to the best and most approved plan; or, perhaps, some of your correspondents would do so.—JOHN RICHARDS."

[However puzzling, we hardly think there is anything contradictory in the plans suggested and advocated in our

serial. Various plans have been given to suit different circumstances, and did we know the circumstances in your case, we could better give advice. Without knowing these, and taking ultimate economy, cleanliness, and safety into consideration, we would decidedly recommend hot-water circulating in four-inch pipes. But if we can be of any further service, pray command us.]

HEATING A CUCUMBER-HOUSE.

"About four years ago, I built a small house—thirteen feet long, six feet wide, inside measure—for the growth of Cucumbers and the forcing of a few early bulbs, &c. The angle of the roof is very upright, with a short hipped roof. In this house I placed a tank, nine inches deep, covered with half-inch slate, with a partition lengthwise for the flow and return pipes, and connected by 2-inch lead pipes to a "Burbidge's" boiler. I find this act remarkably well as far as regards bottom-heat, but I cannot get enough heat in the house itself, as my chimney and boiler are outside. I have grown splendid Cucumbers for three years; indeed, my house is quite a sight when in full fig; but I cannot get this to take place until the middle of June, although I begin to grow directly after Christmas. From the position of the door I fear I cannot get a flue through the house. What I want to do is, to pull down the outer chimney, and pass a flue through the house and out at the other end, as there is now a great loss of heat from the chimney, which would be disseminated through the house from the flue. Admitting this, my difficulty in carrying it into effect consists in the following, as the furnace is built outside of the house:—Can I make the smoke descend a flue from the chimney and pass through the house? Now, as *smokeology* is not exactly in my line, will you kindly advise me, 1st, whether the smoke will descend at so sharp an angle; and, secondly, whether the long flat surface of flue would not be against the ascent of the smoke. I fancy the cold column of air at first lighting the fire would drive the smoke back out of the furnace door. From the way the house is built, I could not contrive the flue now in any other way. When I built the house, I thought I should get quite enough heat from the tank. I should tell you, I have placed the tank about four inches from the front wall, so that the heat may escape that way. I have a wooden frame on the slate, divided into partitions two-and-a-half feet by four (the width of the tank), and eighteen inches deep, inclusive of four inches of rubble as drainage. Now, I fancy, if you think the flue inadmissible, I might have large pots and set on the slates, taking away the wooden frame, and filling up the *interstices* between the pots with *sand*, kept moist. I should get more heat in the house, and have space enough for Cucumbers to grow in pots, as the heat would pass better through sand than these partitions filled with earth. What do you think of this plan? If at all feasible, will you kindly say, in THE COTTAGE GARDENER, what size the pots should be? I should tell you the roof is nine feet for the Cucumbers to run. I have rods twenty-two inches apart and nine feet long.—CUCUMIS SATIVA."

[My first impression is, that you ought to procure a metallic pipe of four inches bore, joining it at the boiler, and carry it through, specially to heat the air of your house, suffering it to drop into the return division of your tank at the extreme end. But all depends on the relation the levels bear to each other, and this you have not sufficiently indicated. If I understand you, I do not see any difficulty as to the long flat surface of the flue. It would seem to be only an extension of the reverberatory portion. We have a "Burbidge" here, and the flue descends from the boiler-top just as you propose. As for the cold column of air, that may, in general, be driven up by a whisp of straw blazing suddenly. Your covering over the tank must, of course, prove a bad conductor; it probably detracts as much as five degrees average from the air heat. Cucumbers would grow well a whole summer in pots, about fourteen inches diameter, by top-dressings, liquid-manure, &c. I should much prefer a special pipe to removing the flue: it would scarcely be more expensive. In all these things, it is best to consult some one in the heating line: failures, attended with much expense, are exceedingly unpleasant.—R. E.]

POULTRY.

DURATION OF A MALE BIRD'S INFLUENCE.

"I should feel greatly obliged by the opinion of some one practically experienced in such matters, when the influence of the male bird ceases in eggs produced by hens after separation from him. I have at present some Gold-pencilled Hamburgs along with a Game cock, and it being my intention to breed from these Hamburgs in spring, and previous to doing so, remove them to a cock of the same species, I wish to know how soon it would be desirable to remove them, so as to ensure a pure unadulterated breed when the season arrives for gathering eggs for that purpose.—A SUBSCRIBER."

[A period of six weeks, or, at the most, two months, would be amply sufficient for your purpose. We should, indeed, greatly question the probability of any egg being hatched that might be laid at the expiration of a month from the period of the hen having been separated from the male bird.—W.]

HEN WITHOUT APPETITE.—CROSSING DORKINGS.

"I have a Shanghae hen which has suffered much from moulting, and though the process of moulting seems to have passed, she remains moping about by herself, having little or no appetite; and within the last day or two, I have discovered she brings off her food (barley) whole and undigested. Could you kindly give me a hint what kind of treatment she requires?

"Would you also say what the probable result would be of mixing *White* and *Grey* Dorkings?—ALPHA."

[The hen is evidently suffering from disease of the glandular digestive stomach, the proventriculus of comparative anatomists. The complaint usually occurs in over-fed birds kept in confined situations, and is rather difficult to remedy. One grain of calomel, twice a week, and a diet consisting entirely of soft cooked food, with fresh vegetables, and a free range, offer the best hopes of success.

The result of crossing *Grey* and *White* Dorkings would be to spoil both,—the size of the former and the colour of the latter being sacrificed without any corresponding advantage.—W. B. T.]

TO CORRESPONDENTS.

ROVEN DUCKS (*Quack*).—Apply to C. Punchard Esq., Manor House, Haverill, Suffolk.

HARTLEY'S ROUGH PLATE GLASS (*J. S. Turner*).—We never use shading with it; but it would not exclude frost.

HARDY FERNS (*Fanny Fern*).—Mr. Appleby's papers on these will embrace *Trichomanes* and *Woodsia*.

CHINESE FRUIT (*T. E. E.*).—The skin and stone you sent are those of the *Litchi*, pronounced *Leechee*, which is the fruit of a tree known botanically as *Nephelium litchi*.

FOWLS TRESPASSING (*S. T. Morris*).—You must not shoot them. Sue the owner in the County Court for the trespass and damage.

MITES IN CHEESE (*C. F.*).—Can any of our readers say how these may be prevented or destroyed?

LOUDON ON PLANTS (*M. J. H.*).—*Loudon's "Encyclopædia of Plants"* is the work you mean.

THREE-ACRE PLOT (*W. D. Corstophin*).—We know of no book that will tell you how to construct tanks, and erect buildings on such a plot. Indeed, if you go to much expense on such a plot, you will not get that expense hack out of the soil during a life-time.

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Advertisements.

In December will be Published,

THE POULTRY-KEEPER'S POCKET ALMANACK AND

DIARY OF PROCEEDINGS IN THE POULTRY-YARD.

Besides the usual contents of an Almanack, it will contain a ruled Diary for recording all that goes on in the Poultry-yard, and much useful information concerning Fowls, by well-known contributors to THE COTTAGE GARDENER.

WEEKLY CALENDAR.

D M	D W	NOVEMBER 21—27, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
21	TU	PRINCESS ROYAL BORN 1840.	30.292—30.230	46—21	N.	—	30 a 7	2 a 4	4 a 32	1	13 58	325
22	W		30.295—30.178	36—23	S.	—	32	1	5 19	2	13 42	326
23	TH		30.227—30.039	33—24	S.	—	34	0	6 25	3	13 26	327
24	F		30.057—29.924	41—29	S.	12	35	11	7 44	4	13 8	328
25	S	Deluge said to have been.	30.095—29.959	46—33	S.E.	26	37	58	9 10	5	12 50	329
26	SUN	24 SUNDAY AFTER TRINITY.	29.974—29.781	43—31	N.	05	38	57	10 37	6	12 32	330
27	M	Oak leafless.	30.119—30.038	40—37	N.E.	—	40	56	morn.	7	12 12	331

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 47.6°, and 35.1°, respectively. The greatest heat, 59°, occurred on the 21st, in 1833; and the lowest cold, 18°, on the 26th, in 1849. During the period 94 days were fine, and on 95 rain fell.

“You practical Gardeners, in explaining why plants require shifting, from time to time, into larger pots during their progress of growth, say, that if a plant is put at first into a large pot (so as to avoid the trouble of re-potting), the roots do not extend downwards, but in a horizontal direction till they reach the sides of the pot, and then downwards upon the sides of the pot till they reach the bottom, enclosing the ball of earth in the centre, from which they receive no support; and to prevent this, the plant is put first into a very small pot, shifting to a larger as the pot becomes filled with roots.

“Again, when instructing us as to when plants should be re-potted, you say,—Do it whenever the roots reach the sides of the pot. Now, if the roots have gone on in a horizontal direction, and the plant has been shifted from each pot whenever the roots came into contact with the sides of it, they will have gone on horizontally till they reach the sides of the last, or largest, pot, and will just be as they would have been had the plant been put into the largest pot at first. If the plant were allowed to remain in each pot till the roots reached the sides of the pot, and down the sides to the bottom, or even half down, I could better understand the above reasoning. You will see there is a something I do not properly understand.

“The nursery people always keep their plants for sale in very small pots. I bought two lately, *Azalea triumphans*, and *Mitraria coccinea*, and both are in such small pots, compared with the size of the plants, that the ball of earth in each is completely enclosed with roots, and such a mass of roots that the earth cannot be seen, nor anything but a solid body of roots, round and round, and underneath, completely enveloping earth and drainage and all. How do you advise me to treat these in re-potting? Should I just put them as they are into larger pots, filling up the space, of course, between the roots and sides of the pots with mould? or do you advise me to disentangle or cut the roots in any way? I believe it will be impossible to disentangle them without breaking and destroying more than half the roots.

“J. M——, *Hamilton.*”

The above letter is one of three (the other two being signed *Alpha* and *Robert C.*), all making the same mistake relative to the object to be attained by potting. The mistake is in the opinion, that when a plant is shifted from one pot into another, it is *always* for the purpose of giving more side-room for the plant's roots.

Now, so far is this from being true, that we may say, without any reservation, that a plant properly cultivated is shifted for that purpose more seldom than for any other. In fact, shifting into a larger pot, beyond one nine or ten inches in diameter, ought never to be practised, except in the case of large shrubs, or where gigantic specimens are required for exhibition.

If a plant is required to increase in size and luxuriance, then let it be shifted at once into a large pot—much larger than the one it is to be turned out from—and let the soil added above, below, and around it, be as rich in the decomposing matter most suitable to the plant as is compatible with its health. By such treatment, you induce the plant to extend its roots in length, and to increase their number; they thus are empowered to draw from the soil a much larger quantity of food, and it is a law of vegetable life, from which we know of no exception, that just in proportion as a plant takes in food by its roots, does it increase its amount of leaf-surface to digest it.

Now, another law of vegetable life is—the more luxuriant you render a plant in leaves, before the blossom-buds are formed, the more you diminish its blossoms. This brings us to the answer which we conceive applies to our three correspondents. If they require moderate-sized specimens and abundance of blooms, they must not re-pot their plants until their roots “reach the sides of the pots, and down the sides to the bottom;” nor should they be re-potted then, until the flower-buds desired make their appearance. Then, the roots should be loosened, and even shortened, sufficiently to allow the plants, after removing some of the old soil, to be re-potted with a little fresh soil all round, in pots of the same size as that from which they have been taken. A little shading for a few days will prevent any flagging, or check, to the plant's digesting processes; and liquid-manure, judiciously applied, will supply sufficient nourishment to sustain the crop of flowers, however abundant.

The November Meeting of the Entomological Society was held on the 6th instant. The President, Edward Newman, Esq., F.L.S., in the Chair.

Mr. Curtis rose to correct an error which had appeared in some of the reports of the proceedings at the last Meeting relative to the jumping seeds received from America by Sir William Hooker, and in which it was stated, that Mr. Curtis had expressed the opinion that

the jumping cocoons observed by Reaumur, and Kirby and Spence, were those of Bruchidæ, or Weevils, and not of one of the Ichneumonidæ, as he was able to state was certainly the case, having succeeded in rearing a species of *Campoplex*, allied to *C. Maialis*, from a banded cocoon of an oval form, which had leaped about like a ball of India-rubber. He had, however, further stated, that it was his opinion that the jumping seeds might produce Bruchidæ (it being the ordinary habit of the species of the latter family to live on seeds). A considerable discussion took place as to the means by which these seeds were rendered capable of leaping; and Mr. Westwood stated, that since the last Meeting he had examined a number of them which had been observed to leap, and that each contained a small Lepidopterous larva, probably that of one of the *Tortricidæ*, allied to *Carpocapsa*. He had likewise received a single specimen of a small Ichneumonideous insect, which had been reared from one of the seeds, and which was, doubtless, a parasite upon the Tortrix-larva.

Mr. Curtis exhibited a species of Gall Fly, which he believed to be new to this country (*Cynips quercus petioli* of *Linnaeus*), which he had received from Mr. Wallcott, who had reared it from the round gall found on the young stems of Oaks near Clifton Hot-wells. Mr. Rich also exhibited several Oak-branches, bearing a number of these galls, from the neighbourhood of Bristol. They closely resembled, in size and appearance, the galls of commerce, from which ink is made; and he had ascertained that they contained a strong black dye, and he thought they ought to be rendered serviceable as a new article of commerce. It was remarkable, that the trees upon which they were produced were destitute of acorns, the galls taking the place of the latter upon the stems. Messrs. Smith and Stainton stated that they had noticed that species of gall in former seasons, although Mr. Curtis thought they had never been seen before, and that the *Cynips* was a new importation. Mr. Westwood, however, stated that he recorded the occurrence of the species, some time since, in the *Gardeners' Chronicle*.

Mr. S. Stevens exhibited a species of Weevil, new to this country, captured by Mr. Foxcroft, in Perthshire. It is the *Otiorhynchus septentrionis* of Herbst; likewise a number of rare and beautiful insects from Natal, collected by Mr. Plant, including the splendid *Goliathus Derbyanus*, *Tefflus Delegorguei*, some rare butterflies, &c.; also a minute two-winged fly, *Phora urbana*, which was stated to have been discharged from the nostrils of a person who had for some time been suffering from a disease of the nostrils.

Mr. Stainton exhibited a new British *Elachista* reared by Mr. Logan, which was proposed to be named, *E. triseriata*; likewise a new *Limaethis*, reared from the Parietaria by Mr. Harding.

Mr. Westwood mentioned, that Mr. Gould had communicated to him a specimen of the common ground Beetle *Helobia brevicollis*, which had been observed by that gentleman to be luminous in the dark, the light which it emitted being, in fact, the means by which it

had been captured. He considered that this luminous property was probably owing to the insect having fed either upon decaying animal matter, or upon the *Geophilus electricus*, which emits a light at this season of the year.

Mr. Baly read a paper containing the description of a number of new species of Australian *Chrysomelidæ*.

The Secretary announced that a new part of the "Transactions," containing four plates, was ready for delivery to the Members, and that, since the last Meeting, the Society had received a donation of a fine series of Perthshire insects from Mr. Foxcroft; and also various publications from the Royal Society, the Society of Arts, the Boston Society of Natural History, the Smithsonian Institute of America, the Entomological Society of Stettin, M. Guérin-Meneville, &c.

THE *Reigate Poultry Association* transfers its Meeting for the present year to Brighton, where it is to begin on Tuesday, the 21st instant, and to continue through the two following days.

Among the regulations, we should specially direct attention to the fourth and fifth; the first of which announces, that "Chicken of 1854 may be shown in the classes for fowls of any age, at the option of the exhibitor." To rescind a rule now sanctioned, for obvious reasons, by all the leading Poultry Societies, and by nine-tenths of the remainder, is a bold step, to be justified only by some manifest advantage, of which, in this instance, we are certainly not aware. This competition of birds exceeding one year with those beneath that age, is, in some respects, unfavourable to both; and if, as is always likely to happen, such a permission induces the owners of the more promising chicken to show them among the adult specimens, the juvenile class must suffer grievously, and the prizes, consequently, will not be bestowed on the most deserving pens. The fifth rule proceeds to state, that "the competition for prizes will be strictly confined to persons, not being dealers, residing within the three counties of Sussex, Kent, and Surrey." Our objections to any limitation whatever, as regards exhibitors, were maintained in our report of the Meeting of this Society, in 1853; and although the boundaries are now enlarged, we cannot but consider all such restrictions as most impolitic.

The regulations conclude with a notification, that "the entries will be limited to 400 pens, not including the Pigeons; and that the services of three competent Judges will be engaged." As the former provision may be supposed to intimate the space at the disposal of the Committee; the example may be beneficially followed by other similar Societies; and with the latter assurance, all concerned must be well pleased.

Turning to the prize list, we observe, that in several classes, premiums are offered for the best single cock bird. A resolution so advantageous to intending purchasers, and so entirely in accordance with the principles of Poultry Associations, demands all encouragement; and

we should be glad to see it extended to all the various races. In the first Dorking class, "colour" is not mentioned; but the birds are to be shown "irrespective of comb." If by this is intimated that combs, whether "single," "rose," or "cupped," are admissible, provided the occupants of the pen are duly matched in this respect, the rule is good; but, as it now stands, the disregard of comb may, very possibly, be thought to warrant the presence "in the same pen of birds with varied combs," which would clearly be an unwise permission. Exhibitors' comprehension of rules, it must be remembered, is often dense; no loop-hole, therefore, from any want of clearness in the stipulations, should be ever afforded them.

We next find a class for "Blue-mottled Dorkings." Is the "Cuckoo" variety thus designated; or some local appellation made use of with reference to birds elsewhere passing under another name? Shanghaes are enumerated as "light," "dark," and white; but we see nothing gained by this change from the usual style of classification.

The Hamburgs are arranged by "colour," not by "marking;" This is palpably wrong; for, whatever the origin of either family, the "Pencilled" and the "Spangled" birds stand wide apart, and should be thus placed on every prize-list. "Polish" (not "Polands") have grievously suffered at the hands of the Committee, for they are all thrown into a single class; and of such parsimony the Judges, above all others, will have a right to complain.

The Geese hatched in 1854 are alone invited to attend, and are to be of specified sexes. As regards the latter requirement, a special arbitrator for *this* particular would be a useful judicial assistant, for there are but very few Judges who would be willing to take upon themselves to speak positively as to the sex of young Geese in a pen. "Pigeons" form a short, and hardly satisfactory list, certain varieties only being there named.

The 28th, and two following days, are named for the *Essex Society's Poultry Exhibition*, at Colechester, of which the prize-list betokens liberality. An inspection of the rules would lead us to suppose that the sound principle of rendering such institutions self-supporting had dictated many of these resolutions; the like inducement held out to subscribers, and the high rate of pen-money suggesting this remark. If this be so, most heartily do we wish success to their Committee; for thus only will the Poultry cause be permanently maintained as its importance deserves. But we imagine that the erasero from the list of the exhibitions of many of the minor shows in neighbourhoods where the spirit of opposition, rather than the conviction of their utility, has been their origin, must precede this more wholesome state of things.

The rules of this association enter somewhat more into detail than is customary with such documents; but the points they refer to are more necessary for the sake of the exhibitor, no less than the officials themselves. Such are those which provide for the exclusion of un-

healthy birds, and the irresponsibility of the committee for losses from disease, accident, or "*mistake*," (the last-named word may possibly be objected to, if error on the part of the officers is thus specified). There is also a good arrangement by sending a printed form of order to every exhibitor, which must be signed by him, and delivered by his servant to the officers appointed to return the specimens.

The schedule opens with two silver cups; the first to be awarded to the best general collection of Poultry, consisting of not less than six pens, shewn by any amateur exhibitor resident in the United Kingdom; the second, with a limitation to the counties of Essex and Suffolk.

Several remarks in approval, or otherwise, that have been made in reference to the Brighton Exhibition will apply to the present instance. But beyond these we notice, that the first prizes for Shanghaes, Game, Polish, and Hamburg, are reduced below those for Dorkings and Spanish. But even if Hamburgs and Polish are thus treated in regard of their presumed less profitable character, Shanghaes and Game surely merit an equal position with either Spanish or Dorkings, and without discussion on their relative merits, we may safely say, that this first instance of official degradation is not likely to be favourably received.

Turkeys have no less than twelve prizes, the "Black," "White," and "other colours," being divided, as, also, the old birds, and those hatched within the year, with additional premiums, for the best cock and hen separately.

A new feature is introduced, in "Swan" classes, both old and young. No other bird, however, is likely to appear to such comparative disadvantage in the narrow limits of an exhibition room; and beyond this, we should certainly question its title to appear among "Domestic" poultry; for, although tamed and accustomed to man, "domesticity" is no by means to be spoken of as among its characteristics. The "extra class," which, until want of room closed against it the doors of Bingley Hall, attracted such general attention from its varied members, made no pretension to limit its admission to mere Poultry, but birds of any description were there received. There are but few persons for whom the study of Natural History has not many charms, and on that account we would gladly welcome back the miscellaneous medley, Swans and all; but to enrol these last-named birds as legitimately included within the Poultry-yard, is, we apprehend, an error.

Five prizes are allotted for Geese; but we should have been better pleased to have seen these truly useful birds in separate classes, according to their respective colours, "white," "grey," and "mottled." This extension, however, by which Turkeys have already profited, will, in due time, we trust, reach this most valuable section of the anatidæ. The Pigeon list fairly represents the different varieties, and the Rabbit fancier is also summoned to the contest.

PRUNING THE PEACH.

It is to be hoped, that from the unusual amount of solar heat and light our Peaches and Nectarines have enjoyed during the past summer, that much less complaints than formerly will be made about the blossoming in the ensuing spring; and that people will once more take heart as to their culture. The winter-pruning of the Peach, although not so important an affair in these days, when good summer management is carried out, as formerly, is yet a thing requiring a little skill; I may add, a good eye and a sharp knife. Like most other pruning operations, the best way is to thin-out all over the tree first, at least, removing those ill-looking or ill-placed shoots of young spray, which it is certain will not be required. Of course, in the selection of spray, ripeness in the wood will be a prominent point for consideration; and the character of wood, in this respect, may, in general, be determined by its colour; its inaptitude for bending, too, is another pretty good criterion; added to this, such wood is generally shorter-jointed than late-made, and, of course, immature wood. The character of the buds must also be looked into; old or exhausted trees are apt to prove short of wood-buds; shoots may be occasionally found in such trees which only possess one such bud, and that at the very extremity of the shoot. These, of course, when they must be retained, may not be shortened. Speaking here of shortening, let me observe, that there is no Act of Parliament, no absolute necessity, for shortening every shoot. Let the young pruner bear this in mind; for after our fine summer there will exist less reason for so much shortening than usual.

With these considerations, then, the young pruner, knife in hand, may proceed to thin out first; and the first point is to take care that no portion of the tree be left bare if it be possible to avoid it; at the same time, with equal care, to see that no part be crowded; and here we may endeavour to guide him as to distances, &c. I would make it a maxim not to have two young shoots exactly side by side, without older wood, or extra space, intervening; when I say side by side, I mean two young shoots commencing and terminating at or about the same point. If I could cause the wood of my Peach and Nectarine trees to sprout where I liked, I would have every succeeding shoot, from the collar upwards, start from a point opposite the middle of the young shoot below it; thus the shoots would be regular as thatching, and with a full supply of bearing shoots, there would be just room to train down the summer wood, without resorting to what I must term the cramming system. In selecting the future crops of wood, great care must be taken of all those young shoots which are placed lowest down in the branch from which they emanate; these have the important office of furnishing, as a nursery, the upper portions, should they give way by disease, or otherwise.

Peaches trained by the fan mode, which is by far the best, as being least artificial, and requiring least time and attention, have, of course, a number of angles formed by the division of one branch into two; and within these angles, respectively, it is most desirable, in order to keep the tree regularly clothed, to retain the lowest young shoot at all times, and, also, to prune it back to a few eyes, in order to render those portions a nursery wherewith to meet future contingencies.

And here I may observe on the removal of old branches. Everybody knows that age, overbearing, insect injuries, &c., are, occasionally, apt so to derange the system of the tree as to cause a rearrangement of the branches necessary; and that in some cases the amputation of decaying old branches becomes a duty. These are, I confess, serious affairs, but they must be grappled with. The Peach is very impatient of these severe operations, although it will bear any amount of pruning in the young shoots. Every good gardener is

apt to falter or hesitate when he meets with a case of this kind. However, where a large branch is barren, or nearly bare of young spray, it must come away; and it should be removed by a sharp instrument, with a clean cut, not too close to the junction point. People are too apt to talk of cutting such very close, and paring them, to enable them to "bark-over," &c.; but this generally ends in disappointment. Peaches and Nectarines in their old branches are not so ready to heal. I have seldom met with a good case of "barking-over." I should recommend, therefore, that an inch or so of the stump be left, and that it be dressed carefully without delay; for if success is desired, the air and moisture must be excluded. I really cannot say what may be the best application; but I have always used good white-lead or thick paint. But such things should not be applied when the stump is in the least degree damp, or the chance is, that the paint will one day come off. The wound being quite dry, we rub a little thin paint on it; and on this, a few days after, when quite dry, apply the white-lead, or rather a very thick paint, colour immaterial. The tree, after these slashing operations, of course, must be rearranged; and when these proceedings are anticipated, the pruner must leave a little wood to make up blemishes.

All these things carried out, the shortening may be done as a final measure; and here the operator must be ruled by the degree of maturity in the shoots; removing, also, those portions of young wood which, being situated in the thicker portions of the tree, may be advancing too far for those ahead.

As beginners may want to form an idea of the degree that may, in general, be pruned away, I may observe, that if anything like a general rule may be offered, perhaps about a fourth-part. Let not this, however, mislead; in cases of bad ripening, or abuse from insects, three-parts have sometimes to be removed; such, however, are extreme cases. Where shoots have been pinched in summer, and made a second growth, that growth may be removed down to a single eye, or bud, and not cut entirely away; at least, such is my general practice; for it will be found that the summer pinching-back plan, forms a knot or callosity much more self-protective than what is called a clean cut into the free portion of the young wood.

If any scale, or other insect, be suspected, let the wood be dressed the moment the pruning-knife ceases, be the period what it may.

For a general dressing of this kind, nothing, as far as I am aware, exceeds the soft-soap mixture, so often recommended; say, nearly two ounces of soft-soap, beat up in a gallon of soap-suds, and two or three handfuls of sulphur well blended with it.

In my next, I will deal with Pears, which will be as much of winter-pruning, probably, as our readers desire.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.

7TH NOVEMBER.

(Continued from page 118.)

AFTER all that has been said and done, to put things right, or to put them wrong, by Acts of Parliament, there is no place in the world, perhaps, in which fair and lawful competition is allowed to be the life and soul of trade more than in London; and not only trade, but everything else, between St. Giles' and St. James', is kept alive and in vigour by free competition. Consumption itself, the direst enemy, after cholera, to some constitutions, is vigorously competed for in London, and is kept alive there. Yes, consumption is kept alive, by a fair profit, in London. Market-gardeners thrive best by consumption; but the long sweep between the

two Saints, includes horticulturists of all grades;—the societies which encourage the different degrees of merit in each grade, as well as the marts which consume the vitals of the market-gardener.

In my old reports on the Meetings in Regent-street, I used to take in the state of Covent Garden market, at times, to show that no part of gardening, to the last sight of the produce, is neglected by THE COTTAGE GARDENER. Yet I felt, in my own mind, that I never, on these occasions, did proper justice to the different exhibitors of fruit. The fact is, there was no competition then against our Society, to keep the "life and soul" together among Apples and Pears; but now, a Pomological Society is planted in Covent Garden, and we must look sharper after the weather when the fruit trees are in blossom; and I, at least, must look to my fruit notes, and make them more telling than formerly. I ought to know the different uses of all the kinds of fruit we cultivate in this country, as well as most gardeners or man cooks know them; and if my future notes, on what fruits I may see and meet with, should not excel the reports of this Pomological Society in usefulness, and in variety, as far as they go, it will not be from want of trying on my part. And this comes of fair competition. Therefore, if the readers of THE COTTAGE GARDENER should not have a dessert after dinner, without going to Covent Garden to buy—I do not mean to the Pomological in Covent Garden—it is not likely to be from want of "useful information" about the best kinds, and the best way of managing them.

Whenever I see a dish of very round Apples, or Pears, or other fruits, exhibited at a show or meeting, the ruling passion makes me shudder all over, to think of how such bullets are to be dished for the dessert-table. The best fruit that ever was grown may be completely spoiled at last, and rendered useless to the man of taste, and the woman of fashion, by a bad or stupid way of dishing them up. I hope every officer of the Pomological is able and experienced enough to dish every fruit we grow, in six different ways, fit for the Queen's table; that should be my criterion for any paid or honorary distinction in such a body, and at such times as we live in; for I can conceive no earthly use in attempting to improve our fruit, or to make improved varieties better known, if we do not know how to taste them with our friends, after dinner, in a tasteful manner, from tastefully made-up dishes of them, and tastefully arranged on the table. I hold the essence of all fruit to lie in the taste; and if it is not tastefully put before you, what is the use of it, if you are a man of taste?

The Strawberry is the only fruit that I can think of, just now, which I ever saw tastefully dished for public exhibition. How, then, are the public to know the right way of dishing their dessert fruit after they grow them, unless you teach them the one as well as the other? I read the "Pomological Magazine" from end to end; but there is not a word in it, as far as I can remember, about this subject; the most urgent of all subjects connected with fruit; and one must never attempt to make a dessert dish of Strawberries after the fashion of the exhibition dishes, when I tell of a great mishap, which happened once within my own knowledge, about a beautiful dish of early, or rather forced, Strawberries, which got a prize at a May Chiswick Show, when I was one of the judges there. I can see that dish now in my mind's eye. It was in a flat basket, which was covered with silver paper, and was about nine or ten inches across; the whole bottom of the basket was covered with Strawberries, and they were piled up in the middle into a round head, six inches above the rim of the basket, just fit for a Queen to see or taste. This basket was to have been set on the dinner-table, for a large, fashionable party in London, just as it was shown at

the exhibition. Meantime, parties who called were allowed to see the beautiful Strawberries in London; and two ladies, bolder than the rest, ventured to taste them that afternoon, and took each of them a Strawberry; but this revealed a secret, and spoiled the whole dish; there was only a single layer of fruit arranged over a cone of dry moss. What was to be done? I forget what; but I think a man, on horseback, had to be despatched twenty miles into the country to get just two more Strawberries before dessert time. So there is little to be learnt from seeing Strawberries dished for the exhibition table. No; we must all learn from the Pomological Society, as I have just said.

One of the worst Pears to dish, of all that were exhibited at our meeting that day, is *Hacon's Incomparable*; an excellent Pear for the season; a hardy one, and a good bearer as a standard in the orchard; but so short-necked, and so large and round in the body, that it would require two men to dish nine or ten of them in a cone-shape, like that basket of unfortunate Strawberries. The best Pear at the meeting, for crowning a dish, was *Beurre Bosc*. There were two fine specimens of this Pear in a collection from Her Majesty, and of all the Pears, it is the best to finish the top with, because it has a long, slender neck, and round or turbinate bottom next the eye.

For the present, I shall leave the Pomological Society, to describe the more fashionable modo of arranging a dish of fine Pears for the dessert, except the last Pear on the top, for which you have only to pop down the sharp end of *Beurre Bosc* between, or in the centre between the other Pears, and the shape of it will form a *key*, as in an arch, to hold the rest together, better than any other Pear.

From her Majesty's Garden, at Frogmore, we had a collection of Pears, some of which were the largest and finest coloured of their kinds ever seen in England. I examined them with Mr. Charlwood, of Covent Garden, who is the best judge of all kinds of fruit of any man I know, and he owned that he never saw finer Pears before. There were six kinds on one tray, three sorts on a side, and two Pears of each sort, arranged in this fashion, beginning on the right,—2 *Van Mons Leon le Clerc*, 2 *Vicar of Wingfield*, 2 *Marie Louise*; all of the same shape, and nearly of the same size and colour, and nearly six inches long. Opposite these, beginning from the right again, were—2 *Napoleon*, 2 *Beurre Diel*, and 2 *Beurre Bosc*; the whole ripe for table; but the *Napoleon* and *Beurre Diel* would keep longer; and this was very early for the *Beurre Diel*, which ought to hold on till the new year. *Van Mons Leon le Clerc* is the newest of these; and fears were entertained that it would not ripen well in England, a few years since, when we had it introduced from Jersey, through M. Langelier; but such is not the case, and we were told, in the Lecture, that specimens of it had been received from Nantwich, in Cheshire, as good as those from Frogmore; that thirty or thirty-six of such Pears would fill a bushel; and that a bushel of such Pears was gathered at Nantwich, from two small trees growing against the front wall of a house, on each side of the door. *Leon le Clerc* is the name of the forger who raised this first-rate Pear, and he wished the name of Van Mon, the great Pear-raiser, to be added to his own, in the name of this Pear; as much as to say, "This is the cream of Van Mon's labours, added to that of my own experiments." The *c* is not sounded in this name, only *Cler* or *Clare*, not *Clerk*, as the country people say.

From the Garden of the Society, we had fine specimens of such Pears as the *Napoleon*, *Passe Colmar*, *Louise Bonne of Jersey*, *Hacon's Incomparable*, *Easter Beurre*, *Beurre Diel*, *Van Mons Leon le Clerc*, *Glout Moreau*, and others with new names, which I do not know; together with a small brown Pear called *Bergamot*

Cadet, which is said to ripen in succession for three or four months; in winter, a valuable quality; but this Pear is only fit for private use, as, though it were shining yellow, it is too small for a fashionable dessert.

Unless you have fruit amateurs round the table, never dish the very largest or the smallest specimens of any given variety; never put too many on a dish, which looks vulgar; and rather go without, than introduce a scanty supply, or fruit out of condition, which looks stingy. The best dinner in London, and the best wines, too, go for nothing, if the dessert is not good and served up in first-rate style. If the proper name of each fruit is not written, in a plain hand, on a slip of paper, and stuck on the dish between two fruit, it is a sign that you want to spare the wine, and follow the ladies into the drawing-room, without raising a Pomological discussion on the merits of this or that kind of fruit.

The next best sample of Pears was from Mr. Tillyard, gardener to the Right Hon. the Speaker, at Heckfield. The finest looking of these, and the best looking Pear in England, is the *Forelle*, or Trout Pear. This was nearly scarlet on the sunny side, and golden-yellow on the other, dotted all over, like a trout, with faint dots; this Pear is soon in and soon out, but it is a good bearer, and a hardy sort; below the middle size, but by no means a small Pear; and being long, it is easily dished in any shape, and no one ought to miss it for a select party in November. *Seckel* is another Pear of the same stamp and character, but not so good-looking as the Trout Pear. *Grosse Culabasse*, and *Duchesse d'Angoulême*, were also in this lot, but their enormous size is much against them, and they require the best aspect on a wall to ripen them properly; and they are not worth it, unless it were to give one to a sportsman just returned from the covers, and dying of thirst. But the best of all Pears, "when you catch it," the old *Brown Beurre*, was beside them; a very tender and uncertain kind, however; but, like the Cabbage Rose among Roses, is the *Brown Beurre*, when in first-rate order. There were several other collections of Pears in the room; and *Louise Bonne of Jersey*, from Mr. Rivers, to prove that the Quince stock improves the flavour of some Pears, at least.

There was a beautiful dish of *Coe's Golden Drop Plum*, from Mr. Hill, gardener to R. Sneyd, Esq., of Steely Hall, Staffordshire, the author of "Shot Silk," for the variegated Geranium bed and the *Verbena venosa*.

Lots of *Pine Apples*.—*Montserrats*, *Queens*, *Smooth-leaved Cayenne*, and *Enville*, and all with large, leafy crowns this time. The autumn was so hot, that all the air they could give them could not check this growth in the crowns; and it seems a kind of relief to know that we are not worse off than our neighbours in growing Pines. My own Pines were never so small in the crowns as at this season, for they had none at all. Two beautiful match Pines, *Montserrats*, from Mr. Fleming, were the best,—one was 5lb. 1oz., the other 4lb. 10oz. Two *Queens* and a *Smooth-leaved Cayenne*, from Mr. James, gardener at Ponty Pool Park, were the next best. The *Cayenne* weighed 4lb 12oz., one *Queen* 4lb., and the other 3lb 11oz. Two large *Envilles*, one of them weighing 6lb. 1oz., the other 5lb. The heaviest was from Mr. Ogle, gardener to the Earl of Abergavenny; and the other from Mr. Ehms, gardener, Winsdale House, Exeter.

Among *Grapes*, Mr. Forbes, gardener to the Duke of Bedford, sent three large bunches of the finest-looking *Black Hamboroughs* I have seen this season. He and Mr. Fleming are the best packers of Grapes of all the exhibitors. Go whatever distance they will, the bloom on their Grapes is sure to be as fresh and sound as when they left home. This is another subject for which we must look to the Pomological Society for instructions. There were other fruits, besides Grapes, at this Meeting,

much hurt by packing. One bunch of the *Barbarossa* Grape, weighing 2lb. 8oz., was from Mr. Webb, gardener to Sir Jasper Atkinson; and *Black Hambro'* Grapes from Mr. Muirhead, gardener to Lord Charles Wellesley. They were to show that mildewed plants may produce fine Grapes if the blight is hatted with in time; and Mr. Muirhead sent word that he found McAdam's anti-blight composition the most effective cure for his Vines: his bunches looked pictures of health and cleanliness, and they were nearly 2lb. each, notwithstanding a severe attack of Vine-disease at first.

Mr. Ingram sent a beautiful lot of his seedling *Strawberry*, called *Prince of Wales*, from the Royal Garden, at Frogmore. They were the second gathering from forced plants, and held on since the middle of September; he also sent the finest-looking *Kidney Beans* I ever saw, from a cold pit, without heat; they were long, flat, and tender, without the smallest sign of seeds inside, and called *Mohawk*, and if they are good bearers, and tolerably hardy, I should say no Dwarf Bean excels them.

A new way to pay old debts was shown by Mr. Tillyard, in the fleshy roots of *Oxalis Deppei*, which were so waxy as to stick in one's throat, when we used them as kitchen stuff; but now, he says, they will pay the damage, if you preserve them in sugar. I should really think this would answer well for helping out the dessert in winter, just as they preserve lettuce-stalks, in imitation of green Ginger. I have often used this mock Ginger in the dessert, and I would quarter the *Oxalis* roots, which look like stumpy, unripe Parsnips, and very white inside, for the same purpose in the dessert.

MISCELLANEOUS.—There were not many odds and ends exhibited at this Meeting. Mr. Rivers, the great Rose-grower, sent two Atlas Cedar-trees, four or five feet high, in pots having holes all round the sides, such as some use for Orchids, and roots were fibering out through all the holes. This is a very good nursery plan, to secure plenty of roots without cork-screwing them in the pots; but for private use, and temporary purposes, little, flat hampers, or even fish-baskets, are preferred by gardeners to nurse pet and rare plants in, for a few seasons before they plant them out for good.

Mr. Dodds, gardener to Colonel Baker, of Salisbury, sent a very neat-made frame, thatched with straw, for covering cold pits, and hot pits, or any other pits, instead of mats. A frame of the same size as the glass light, with cross-bars, is covered with a thick layer of wheat-straw, and the straw is fastened to all the cross-bars with tarred twine, and they last many years.

There were specimens of a *Bamboo*, from John Luscume, Esq., of Combe Royal, in Devonshire, which grows to a great height out-of-doors with him. It looks much like the hardy Bamboo, which Lord Hardinge sent from India, a few years since. D. BEATON.

GIVING AIR.

"WINTER is now coming on us, and I feel perplexed about your rules of much and little air-giving, to suit different plants. Will not the house soon become of the same temperature all over, even when most air is given at one place; then why the necessity of arranging the plants in groups? I take nature for my guide, and like to see my plants regularly mixed." There is no necessity for disputing your taste. To a certain extent, a man may do "what he likes with his own," provided he touches on no privilege or right of his neighbours; and this you are not likely to do by arranging your plants just as best pleases you. The basis of your theory—a uniformity of temperature in the house—is quite a different matter. Have you experienced the same sensation, as respects heat, when seated near an

open window in a cold day, as when you removed to the other side of the room, where a fire was either burning, or there was still heat left in the walls from the fire of the previous evening? Besides, a cold air is quite a different thing when perfectly still and when in rapid motion. In the one case, we can bear it for some time, almost insensible to its influence; in the other, we get rapidly chilled at every pore. Just so with plants. The greater the disparity between the inside and outside temperature, the greater will be the motion produced inside by a free admission of air. Wherever the opening is made, the current will there be the strongest. At the end of the house, where little or no air is given, the motion will be less, and the temperature will be higher, though, of course, there will be a constant tendency to an equilibrium, unless there is a counteracting agency at work. When the sluice of a mill-dam is opened, the rapid current takes place at the sluice; it is some time before the motion is at all perceivable at the farther extremity of the reservoir. The cases are by no means analagous, yet the one may serve to illustrate the other. Hence we consider the following positions as being next to self-evident.

1. Plants in greenhouses should, if possible, be grouped into hard-wooded and soft-wooded; plants in bloom and not in bloom; plants growing and in a state of rest; just because hard-wooded plants, and plants in a state of comparative repose, will stand more cold air in motion than soft-wooded plants, or plants growing rapidly, or in bloom. A dampish, rather still atmosphere, that would not disagree with a *Cineraria*, or a *Calceolaria*, would ruin a favourite *Heath*, that on its native hill-side, at the Cape of Good Hope, enjoyed the bright, warm, dry days of summer, and the chilling nights of winter. The reasons why the *Heath* will not stand with us, a temperature equally low to what it endures harmlessly at home, are chiefly two-fold; our atmosphere is more charged with vapour, and we have less powerful and continued sunshine to elaborate the juices and consolidate the tissues.

2. Air may be given freely to greenhouses in winter (keeping the above precaution in mind) when the air is still, or there is only a slight breeze, and there is little difference between the external atmosphere, as respects temperature, and what you wish the internal temperature to be. Even in the most favourable circumstances, it will, however, be always advisable to shut up close at night, from the end of October until the middle of April. In cold, frosty, or foggy weather, the houses should be shut up, at the latest, by two o'clock. If the sun should shine rather powerfully in the afternoon, the heat stored up will save the fuel-heap, and prevent the plants being so much deprived of their moisture.

3. The greater the disparity between the wished-for internal and the external temperature, the less should be the quantity of air given. This will at once appear, from two considerations. First, the giving of much air in very cold weather pre-supposes a free recourse to a heating medium; and the employment of that again, unless means are taken to counteract it, by evaporating-pans, &c., which, again, will just require more peat to raise the water into vapour; will so dry the atmosphere, that it will extract moisture wherever it can find it, from stems and leaves as well as soil. Then, secondly, a keen, frosty air, is next to kiln-dried air. It cracks the stems of shrubs; it splits the bark of twigs; it makes openings in the back of our houses; it prints its fissures on the rosy lips of beauty; not solely and alone by the congealing and expansion of the juices, for this will not take place to any extent, until these descend beneath the freezing-point, but, also, by stealing moisture from whence ever it can, to get back again its general amount of vapour. Imagine not so much the contest between dried, heated air, and dried air some 15° or 20°

or more below freezing-point, or even the seeming quickness with which they mix and mingle, as they pass and repass each other; but rather figure to yourself the decision to which they have generally mutually come, to extract, bleed, and sweat out, as much of the life-blood of your plants as will bring themselves nearer the verge of moisture-saturation point. Hence, I have several times seen plants in a greenhouse, in a cold winter, presenting such a woe-begone appearance, as if they had been exposed to more than the parched heat of a desert sirocco; and yet the owner could tell you of the hours of sleep he gave up in attending to fires, and how he kept them burning all day, that he might give plenty of air, because he had been instructed, that without that abundance of change of air at all times, his plants could not thrive. It is very true that these evils might have been lessened, by damping the floor of the house, by using evaporating-pans, and by frequent syringings of the stems and leaves; but though all these operations are at times highly serviceable, and I have frequently recommended them, the extreme use of them would give you an amount of moisture in the house, and when the weather changed, you would, very likely, be under the necessity of lighting fires again, to dissipate that extra amount of moisture. By the mode I recommend, much labour will be saved, and much fuel remain unconsumed. Keeping these statements in view, I will endeavour to make this third proposition as simple as possible to young beginners, by a few suppositions and examples.

1. It is desirable to give your greenhouse, on an average, a temperature of 45° at night, with a rise of from 10° to 20° at mid-day from bright sunshine. If you shut the house up early in the afternoon, because the sky was clear, and you expected a little frost before morning, the plants would receive no harm, though for an hour or two the house was higher than usual, because sun-heat, being accompanied by light, would not draw and debilitate like artificial heat without light; and the consequence would be, your house would want little or no artificial heat to keep it up until the morning; and the character of the day would regulate the quantity of air to be given, making shrewd guesses, after mid-day, whether the evening was to be mild or keen.

2. But in the conditions implied in such a house, a keen frost comes, some 5°, 10°, 15°, or more degrees below the freezing point of water; you know that the cold must be kept out, but you also know that the greater the cold the greater the consumption of fuel; and, consequently, the greater tendency to kiln-dry the air in which your plants respire and perspire; and you use evaporating pans and syringings to rectify this evil; having nothing to grumble at but the consuming furnace, that keeps ever crying the live long night, Give! give! as the frost increases in intensity. You will now, we trust, also perceive, that though 45°, or even 48°, or even 50° at night be a good average, in fine, mild weather, that your plants are some of the most yielding, obliging things alive; and that for short periods they will not suffer at 40°, or even at 38°, unless, perhaps, some few tender things brought from the foreign-house; and, coupling this with the double fact, that the more the mercury sinks, the greater will be the quantity of fuel requisite to keep up a highish temperature, and the more will the air be dried in consequence; you come to the conclusion to lessen the double evil, by allowing the house to get 5° or so colder; and, not content with that, but knowing that radiation of heat from a body would be, to a certain extent, intercepted by an opaque substance coming between a body cooling, and the medium into which it radiates its heat, you cover part, at least, of your glass with some protecting substance, be it cloth, mat, felt, *frigidomo*, hay, or straw; and you thus save fuel, and promote the future health of your plants, by

saving them from too much of a dry heat. In fact, instead of making the plants to take a forced march, in unfavourable circumstances, you present them with a period, during which they can recruit their powers by rest and inaction; and if not carried to an extreme, they will afterwards reward you with their sturdy appearance.

But you say this is all very well as a pleading in a case—protection and lowish temperature, in cold weather, *versus* the furnace and a hot dry atmosphere;—but what has that to do with *air-giving*? Well, I may be wrong; but in the case under consideration, I could hardly dissociate the one from the other, they seem so much like twin sisters; or pretty well as much united as husband and wife. But now, since we have come to the length of allowing the thermometer to fall a few degrees, in preference to dry roasting the plants, let us walk into the house at six or seven in the morning—it stands at 40°; all right; but it is biting cold; the outside thermometer is at 18°, and we may expect it to fall a degree or two more before sunrise, and a brisk breeze is bringing the blood to the skin, and a black frost and a hazy mist tells us there will be little or no sunshine to-day. The first thing to do is to stir up and light a fire, just to prevent the house getting lower; and if the black frost continues, and there is no sun, a mild fire will have to be kept up all day, so as to raise the house from 5° to 8° before the evening, allowing it to fall again during the night. With such a wind, sweeping off the heat in a five-fold ratio, the more glass that can be covered, even during the day, the better; provided the days of such a kind are not numerous at one time; and every hole and cranny should be stopped; for with all our care, quite enough of cold will get in without any air-giving.

But in another case, with an equally severe night, the day and the morning are different; for the sun shines brightly, even though it freezes hard in the shade. With the first buddings of sunshine, the fire-heat should decline. It will then require more sun-heat to raise the house, 5° or 10° higher than usual; and that, in general cases, in such circumstances, I would do before opening any part to the external air. And how to do it then? Throw open your front sashes freely? as we have seen clever youths not seldom do, and who ought to have carried a good mark of a cudgel, as their star and ribbon of honour from the court of promotion and progress. No! but when the house rises to 60°, and onwards, the foliage receiving a slight dewing from the syringe, and this rising will take place sooner or later, or not at all, to the above height, in proportion to the size of the house, as respects its cubic feet of air, and the inclination of the glass, meeting the sun's rays at a perpendicular, or a more obtuse line of incidence; when this rising does take place, we would merely give a moderate portion, or rather, a very small portion, of air at the top sashes, or the highest point in the roof, and that for two reasons: first, the air will be more heated and rarified there, on the outside, on account of the sun striking against the glass; and, secondly, the air thus partly warmed, on the opening of the sash, passes at once through the warmest and moistest air of the house, and thus becomes heated and moistened before it comes in contact with the plants. If the day was windy as well as sunny, even more care would be necessary to give little; and in extreme cases, and with young beginners, stretching fine netting over the openings would be an advantage. In either case, during the winter months, with every prospect of again having a frosty night, shut up close between one and two o'clock in the afternoon.

The case of fine, mild weather having been taken into consideration, there is only one further case to which I will refer:—Cold, damp, still, foggy weather, that searches its way into every nook and cranny. This damp fog never yet did any good to greenhouse

plants, and to such tribes as the Heath nothing can be worse; for, if long continued, it is a sure winding-sheet for them. This dull, thick fog is generally attended with cold weather, the temperature not often being many degrees above freezing. The difference in heat alone will often be sufficient to keep it outside of our greenhouses, and as to opening a sash to bid it welcome, that must not for a moment be thought on. Sometimes it will enter—especially if the weather is rather warm—and when it does, it must be let out again by lighting a fire, the heat from which will change the visible into invisible vapour, and cause a circulation, or rather moving of the air of the house. In extreme cases, when the weather is very still, a little air may be required to aid the fire-heat in promoting motion, &c.; but, as soon as the enclosed atmosphere becomes clear again, the air openings may again be shut.

Taking these few cases as prominent points of observation, the matter of air-giving in winter will be relieved of many of its perplexities. The giving air to a greenhouse in summer is a very simple affair.

R. FISH.

ACROPHYLLUM VENOSUM, OR VEINED ACROPHYLLUM.

THIS very handsome hard-wooded plant is a native of New Holland, and is still rare in collections, on account of a supposed difficulty in propagating it. It, also, is somewhat difficult to grow well. I have, however, seen, at some of the Metropolitan Exhibitions, a plant or two in perfect luxuriant health, and exceedingly well-bloomed; proving, by ocular demonstration, that the plant may be cultivated with perfect success, if the right method is followed. It is one of those plants that the common attention (such as is too generally given to greenhouse plants) would infallibly destroy. I have frequently met with it in even respectable places, where many stronger plants were grown well, in a most wretched condition; and when I noticed it, I was generally informed that it was a sickly plant when purchased, and had never recovered. Thus the poor nurseryman was blamed, and made answerable for the ill-health of a plant that had been out of his hands for years.

Now, I do not pretend to deny, that sometimes this and other difficult plants may come to a gardener in indifferent health, but then, the gardener's duty is to strive, with all his means and skill, to recover such plants, and put them into good health, by superior treatment; but I fear, in too many cases, the plants have come to the gardener in good health, and have been improperly, not to say carelessly, treated, and thus made sickly, unsightly objects; anything but a credit to the place. Some may say, and truly, too, "I never had this plant under my care before, and, therefore, I must learn the right way to grow it from some one that has." Happy man—he is that is willing to learn, and not too proud to be taught, however high his position in the gardening world may be. A man of a teachable, ingenuous mind is he, and I warrant will soon grow any plant well, however difficult it may be.

Such choice plants as this *Acrophyllum*, and some others, I have resolved to rescue from the unmerited obloquy of being difficult to cultivate, by giving, now and then, the culture in full, necessary to ensure success; and I am pretty certain many a cultivator will thank me for my information, and will be tempted to purchase a plant to try his skill in applying such information on its culture.

Acrophyllum venosum is a bushy, slow-growing shrub, with oval-shaped leaves, sharply cut at the edges. When in health, the leaves should be green, slightly tinged with bronze. When it is badly treated, the leaves are

all over of this bronzy-green colour. The flowers are produced at the ends of the stronger shoots, in spikes, the lower part of which is mixed with small leaves, which leaves set off the whitish-pink flowers to great advantage. When well grown, and freely bloomed, few plants surpass it in beauty.

SOIL.—The first thing to look for to succeed in growing this plant is the right soil, or compost. Procure some good turfy heath-mould, full of fibrous roots; chop it into inch square pieces, then, with the hand, break these pieces into four; mind, *break*, not chop them; then throw a quantity of fine silver-sand over the heap; lift it up by handfuls, mixing the sand thoroughly with the little lumps, till the whole appears almost white with the sand. Then procure some turfy loam, and mix it also with the sand; and, lastly, a small quantity of leaf-mould, and put it through the same process. Then mix them all together in the following proportions—three parts, or say pecks, of the prepared heath-mould, one peck of the turfy loam, and half-a-peck of leaf-mould; mix the whole well, but gently, together, and it will form an open mass, in which any New Holland plant will thrive, if all other points of culture are properly attended to.

POTTING.—Having procured as healthy a plant as possible from the nursery, about the month of March, proceed to repot it. The plant I would choose should be a bushy, healthy one, about four or five inches high, growing in a $4\frac{1}{2}$ -inch pot. I prefer this size to one either less or larger, unless a specimen plant is wanted at once. A plant of the above size will cost about five or six shillings.

Choose a nice, clean, handsome-shaped pot, from six to seven inches wide, and proceed to drain it well. This is an important point in culture; for if the soil is not well drained of all superfluous moisture, the plant will undoubtedly become sickly, and without great care will perish. If the hole at the bottom of the pot is small, make it larger, by gently breaking off pieces all round. It should be as large as a shilling. Cover this hole with a larger piece of roundish broken pot, and cover this with some smaller pieces, till you cannot see it, then, upon them, place nearly half-an-inch of clean potsherds—by clean, I mean, that all the dust should be sifted out of them. When this is done, pick out a few lumps from amongst the compost, and lay them compactly upon the drainage; this will keep the drainage from becoming choked by the finer particles of the compost; then put as much of the soil into the pot as will raise the ball just level with the rim. All this being done, then turn the plant out of the pot, preserving the ball entire; rub off gently the old surface-soil as far as the roots, but be careful not to break or bruise them; also gently pick out the old drainage, as far as may be safely done without disturbing or injuring the roots, which, in a healthy plant, will be very numerous here. Should there be any worms, or even only one, in or about the ball, now is a good time to eject them. Then set the ball exactly in the middle of the prepared pot, and fill in with the fresh compost around it, pressing it down while the operation is going on with a round flat-ended stick. You can see to do this well, better with such a stick than with the fingers. Make the compost firm, but by no means hard; for if it is made very solid, like ramming a post, neither the roots nor yet the water can penetrate it. It may be proper for Geraniums, and other strong-rooting, vigorous plants to make the soil as firm as possible, but all fine-rooted plants should have the soil only moderately firm.

When the pot is quite full of the compost, so that the old ball is covered about half-an-inch, then give the pot two or three smart strokes on the potting-bench, which will settle the soil down into the pot, leaving half-an-inch below the rim to hold water. If this shaking will not

do this, then scrape off as much soil as will leave that space. The potting is then finished, and then give a gentle watering, and place the plant in the greenhouse. This potting operation may appear a tedious one; but, the fact is, it takes a longer time to read than to perform, if all things are in readiness.

I have directed this work to be done in March, because, at that time of the year, there is the least excitement both in the plant and the weather. The sun has not then so much power, and, therefore, less shade will be necessary. By potting thus early, the energies of the plant will be gradually excited, the roots will make some progress before the top begins to grow,—a most important point in the economy of progress in the plant. *A plant of any kind, whether in-doors or in the open air, always removes best when at rest.* Hence the best planters plant evergreens in September and October, and deciduous plants as soon as the leaf falls. There is this difference in evergreen plants in pots; if potted in the autumn, the new soil is in danger of becoming saturated with water, or, at least, the nutritious properties of the soil will be partially washed out of it by the necessary waterings it received through the winter, however carefully that element may be given.

SUMMER MANAGEMENT.—I consider the summer of greenhouse plants to commence in April, because then the plants begin to grow freely. The *Acrophyllum venosum* will then be pushing, and would be greatly benefited by a few more degrees of heat than many of the greenhouse plants require. Whoever has a Peach-house, or even a Vinery, just starting into growth, would find such a house just the place for his young specimens. The roots have made some progress, and, therefore, the top may be encouraged by a more liberal temperature; only let the transition be gradual. Place the plant within a foot of the glass, and observe that it has a sufficient supply of water. As the sun attains more power, a thin shading will be necessary from eleven o'clock till two; but this shading must by no means be overdone, or the plant will be too much drawn. Air must also be given, to harden the wood as it progresses. In this position it may remain till the middle of May. Watch its growth, and as soon as the shoots have grown two or three inches, nip off the tops, to induce them to break into several branches, and thus form a bushy plant.

At the time above specified it may be removed into the greenhouse, the weather will then be sufficiently warm to warrant the continuing growth; only take the precaution to place it in such a situation that no draughts of cold air will rush through it. It is these draughts that check the growth, and discolour the foliage of many of our more delicate New Holland plants.

At this time of removal, the plant may conveniently be tied out; that is, neat, small sticks may be thrust into the soil, leaning outwards, and the outside branches brought down and tied to them; thus giving more room to the central branches, and more air to the leaves of the plant generally. As this plant has a tendency to grow upright, this training process is the more necessary.

If the growth is rapid and satisfactory, a second potting in June may be desirable; but then great care must be taken not to shake or disarrange the ball in the least. Even the drainage, or, at least, all of it that adheres to the roots, must be kept entire. Repot into a pot two or two-and-a-half inches wider, using all the same precautions as to draining, shading, &c., as I have recommended for the spring potting. This is, however, only to be practised when the plant has made very free growth, and is evidently short of pot room.

As the season advances, the plant may be more exposed to the full air and summer's sun, to harden and mature the wood. Keep it in the greenhouse all the

summer, unless you have the convenience of a cold pit. In it you may place your plant through July and August, and then return it to the greenhouse. In the greenhouse keep it through the winter, but in the warmest part of it, and pretty close to the glass, reducing the quantity of water greatly, only give enough to prevent it flagging.

PROPAGATION. Prepare a cutting-pot about the end of June, and a bell-glass to fit it. Fill it half full of crocks, and then with the compost within an inch of the rim, and that inch fill with silver-sand; water it gently, to make the sand firm. Then take off as many cuttings as you require; choose such as are a little hardened at the base; cut off even just below a joint, and dress off the lower leaves. Insert them into the sand, with a small smooth stick, within the bell-glass when it is put on, and give and place them in heat, shading from the sun. It is not easy to strike, but by care and perseverance success may be achieved.

T. APPLEBY.

COTTAGERS AND THEIR HORTICULTURAL SHOWS.

THERE are few persons who have visited provincial Horticultural Exhibitions but who must have been struck with the excellent quality of the vegetables shown in the Cottager's class, as well as, now and then, by their florists' flowers and hardy fruits. Such is the general good quality of the things they exhibit, that they very often equal, if they do not excel, the other classes, where the competitors have more extensive means.

Their success is generally hailed by all parties, and we may justly pronounce them entitled to assume a little of the honest pride for the merits of which they now and then think their productions are worthy. But my purpose here is not to laud their praiseworthy zeal in forwarding such things to a show, but to direct attention to their little holdings, and then see in what condition their respective homesteads are kept; for a well-kept cottage garden is not always the one that obtains most prizes at a Horticultural Show. On the contrary, I have been sometimes pained to see the preparations made to meet that particular time supersede everything else, and all crops, and everything else not intended to be exhibited, very much neglected. This, I need hardly say, is not always confined to the cottager; and all must have observed cases where a love of "showing" has grown upon certain parties, to the exclusion of other pursuits. With the cottager, this might be very much altered, if his garden and home were to be visited by the same censors who place his productions first on the list on show-days; but, as it might not be convenient for these parties to do so, others might be found to do it, equally competent, on whose report his productions at show-time might receive an additional interest or detraction, as his merits or demerits as a manager might demand. This, however, could not be done without trouble, and might, in some instances, assume an invidious aspect.

Well, then, a better way might be by increasing the number of district, or even parochial, shows; for, by that means, a greater number of exhibitors would be brought forward, and the more general welfare of the district promoted; for many, who never thought of exhibiting at a county show, would have more confidence to do so in their own respective parish, or district, where they knew whose productions they were to compete against. All this might be accomplished at a trifling expense. Prizes of low value, nevertheless, often carry with them an honorary distinction far above their intrinsic worth; and the assistance or patronage of the wealthy parties in the neighbourhood might

easily originate and carry out a show of that kind; and I know of several cases where such is done by the co-operation of a few spirited individuals uniting for the general good. But it is much oftener done by some great landed proprietor, who cannot adopt a better course to improve and better the condition of his dependants, than by encouraging that kind of industry which tends to make a cottager a successful exhibitor.

Now, whatever may be said of certain exhibitors neglecting such produce as they do not contemplate showing, it is evident they would be compelled to pay a fair share of attention to the whole, were they aware that their little holdings would be now and then visited by those by whose decision their prizes, at a forthcoming show would be either diminished or augmented, as their case might deserve. These visitations ought also to be without any given notice; for it sometimes happens a deal of preparation is made to receive the judges on a show-day, while, at other times, their gardens do not exhibit any deserving marks of approbation. These visits ought not to be made to assume an official character, but only a friendly look in, on the part of some one qualified, as well to give advice and encouragement, as to criticise what is present; and there is a sort of a feeling of honourable distinction in a great man looking into the garden and homestead of a poor cottager; the latter will feel pleased to show what is good, and afterwards determine to improve what is not. So that, in all probability, a second look-in will present a decided improvement.

I have known cottagers, of no great pretensions as garden-managers, turn out excellent cultivators by the little encouragement they received by living next neighbour to a spirited and industrious cultivator; and, assuredly, there is no way of employing the leisure hours so beneficially as in cultivating a garden or plot of ground; for, apart from the pleasure which the labour of putting a place into tidy order creates, there is also a hope, amounting almost to a certainty, that Nature, too, will assist and finish the work successfully that is begun; and to view the progressing way in which such operations are going on, forms one of the most delightful contemplations the mind can dwell upon; and the cottager is not insensible to it; for though his education may have been humble, and his other attainments not extraordinary, still, he often is a much closer observer of Nature than he gets credit for; and if his notions of certain things be sometimes tinged by prejudice, they are seldom marred by pedantry; and the man of science may often derive a valuable hint from a cottager, on subjects he hardly expected him to be acquainted with. In the best cultivated districts of the kingdom, the mode in which each operation is performed is tolerably well known amongst all the rural population, where, in fact, a considerable number derive their sole livelihood by such work. Where orchards are numerous, the different modes of grafting and budding are well known; and where the smaller fruits are grown, pruning is equally universally performed by all; so that, in such places, encouragement is all that is wanted to raise the cottager in the ranks of cultivators: the routine of the work he is well versed in, if he can only be induced to exercise the necessary assiduity and perseverance. It is, therefore, to the affluent that I here make the appeal; and, assuredly, those who cannot give useful instruction, may now and then give encouragement, if it be only in the way of looking in, and complimenting the deserving, or cheering on the more apathetic. A kindly feeling is thus promoted, and the general welfare advanced.

In recurring again to the subject of Horticultural Shows, I need hardly observe, that most provincial Societies, possessing any influence or means, have, during the last dozen years or so, directed great attention to the Cottager's class; but it often happens, where

these have been continued a few years, the same names appear, invariably, in the list of winners; certainly not without just merit on their side, but to the exclusion of others. This state of things cannot well be altered; but the more general adoption of village or parochial exhibitions would tend to bring forward competitors that might, in turn, wrest the prize of excellence from those who have occupied it so long; or if not, they would certainly spur the others on to a greater degree than would be done had they been allowed to rest on their oars. It is, therefore, highly advisable to encourage the formation of district societies, however humble may be their means; for by so doing, an impulse may be given to horticulture which may be of great use to all concerned.

If example be wanted of what may or can be done by such societies, it is only to refer back to some that existed thirty years ago, or more, when the culture of the Gooseberry, and some few fancy florist flowers were shown, which we all know took more trouble to produce than many things that are now grown; and as we are told, that in other nations the national energy has not at all diminished during the last generation, I hope, that in a pursuit that only calls forth the better and brighter traits of human nature, there will be the same amount of indomitable perseverance, which, united with the intelligence which sense and practice have both made familiar to every one, will enable some of our now neglected cottage gardeners to take fresh courage, and thrust in the spade with that determination, which, accompanied with other prudent management and vigilant attention, will, at the proper time, reap the reward that mother earth invariably affords to all that with real perseverance search for her treasures.

J. ROBSON.

THE LAST STRUGGLES.

By the Authoress of "My Flowers."

(Continued from page 105.)

THE concluding scene of John Henry's life is a melancholy one. The veil dropped from his eyes in a very short time after obtaining the end for which he left friends, and home, and spiritual blessings; and the sad reality stood in all its hideousness before him.

Mr. Johnstone's words convey, with exquisite pathos, the end of his short and affecting life:—"Shortly after the receipt of the above letter" (contained in the last paper,) "there was another to myself, but which, unfortunately, cannot now be found. Although short, it was one of the most affecting letters that he wrote. It showed that a great change had taken place in his feelings respecting the place of his employment, and the people with whom he was obliged to hold intercourse. His wages, it is true, had been raised; he had the prospect, too, of an increase of pay, and all, as regards his temporal circumstances, seemed to be everything he could wish. He had good health, full employment, good wages, wholesome food. But his few months' residence were sufficient to discover to him, that 'whilst the land was well watered, even as the garden of the Lord, the men were wicked, and sinners before the Lord exceedingly.' He had discovered the distressing, painful fact, that while there was enough, and to spare, of the meat that perisheth, there was a famine in the land of a more fearful kind than the mere scarcity of bodily food—a famine, not of bread, nor of a thirst for water, but of hearing the words of the Lord." There were no regular stated means of grace; no Sabbath, no church, no minister. It is true, a minister visited at certain seasons, but these visits were more precarious, at long intervals between, and liable to frequent interruptions; so that the sound of a preached Gospel seldom reached his ear during his residence at G—. On his first arrival, he comforted himself with the hope, that in this respect matters would improve; but when he wrote this letter they were becoming worse:

the number of men employed in the establishment had been increased to 100, all of whom worked full time upon the Sabbath day. In writing this, he added, 'The master has just been round, and told me, if I did not work on Sunday, like another, I might leave his employment; and he declared that he would have none about him that would not. I at once refused him, but how it will end, I know not.'

This was the severest test his decision of character, as a Christian, had been yet exposed to; but through grace, his former fortitude and resolution remained. He was enabled to hold fast his integrity, and to maintain his testimony without wavering, to the end. For many months he had stood out alone against the threats and persuasions of his employers, refusing to share in their Sunday gains, as well as in their Sunday labours. Many a coarse jest and cutting sneer had been passed upon him for being too religious. His righteous soul had been vexed, from day to day, in seeing and hearing their unlawful deeds; and when he wrote this, his last letter, "his feet were almost gone, his treadings had well-nigh slipped," his faith seemed about to give way, and in a tone almost bordering upon despair, he added,—"God only knows whether I shall be able to stand out much longer or not." But He who is the Keeper of Israel, He, whose it is to keep His people "through faith unto salvation," kept him safe to the end. He who had been with the Hebrew children in the fiery furnace, even when it was heated seven times hotter than it was wont to be heated, was with him during all this fiery trial, and brought him through, unhurt and uninjured. In a short time deliverance came; sooner, but in a different manner from what might have been expected. In a few weeks after this letter was written, death came, and, like an angel of mercy, snapped off his chains, opened his prison door, and released his fettered soul from the bondage in which it had been kept, conducting him to that celestial city for which his heart so longed and panted, "where the wicked cease from troubling, and the weary are at rest;" where "the inhabitants shall no more say, I am sick;" where "they shall behold the King in his beauty; and see Him face to face, no cloud between."

The letter conveying the intelligence of poor John Henry's death, the only intelligence of him that reached his relations, is short and meagre; but it bore, nevertheless, comfortable assurance as to his eternal state:

"July 8th, 1851.

"I am sorry to inform Mr. Henry, of Drumnalmalta, of the death of his son John, about four months ago. . . . He died in Mr. —'s employment on the C— river, nearly 300 miles from Sidney. It was yesterday I had an answer from Mr. —, informing me that he died of the dropsy, and that he had been three weeks ill previous; also that he left no will or commands how his property was to be arranged. In order for any one to get it, they must administer, and the expenses will be very great. But I heard since, that the Rev. Mr. S— is going to take it into his own hands, and that his father would have to send the power of an attorney; but Dr. S— will tell them how to act.

"I have seen a man that was with John when he died; he died happy and contented; washed in the blood of Jesus, and having a desire to depart, and be with Christ, which is far better.

WILLIAM IRWIN."

After the wear and tear, the strivings and labourings of life, how abrupt and brief seems the closing scene! and how few are the words necessary to record it!

Poor John Henry reads us a lesson, readers, from his distant and lonely tomb. He quitted his native land in hopes of bettering his worldly condition; but he found spiritual destitution, and weariness of soul. Alone, among the heathen, what were money, and fulness of bread to him? Many and deep must the sighs have been that he sent back over the broad ocean to his family, his beloved spiritual father, and the saints from whose communion he had severed himself; and mournful must have been the prospect before him as he struggled among the evil spirits and sabbath-breakers, with whom he dwelt and laboured. Yet he was a child of God; and as such he was taken away from the evil to come. A few days illness only was laid upon him; his sorrows and troubles were ended; and, like Enoch, "he was not: for God took him." The believer's short-comings and

weak faith are punished; but they are washed and put away, and his end is peace. It would not be possible, or justifiable, to transcribe Mr. Johnston's concluding pages; they should, however, be read by all who can buy the little book, for they are, indeed, precious. To those in a humble rank of life the whole memoir is truly valuable, and much worldly as well spiritual instruction may be gathered from it. It plainly, and loudly, and unmistakeably confirms the holy command, "Seek ye first the kingdom of God and his righteousness, and all these things (food, raiment, &c.,) shall be added unto you." Oh, dear readers! whoever you are, high or low, rich or poor, be *fully, intensely* assured, that to *believe* and *act* upon this precept and promise is your only hope, your only happiness; your great duty; and your only great, and never-failing security. "Seek not ye what ye shall eat, nor what ye shall drink, neither be ye of doubtful mind." Readers! *remember this*.

THE CAMBRIDGE POULTRY EXHIBITION.

This proved a very interesting and successful undertaking, and received the patronage of His Royal Highness Prince Albert, and also of most of the resident clergy and nobility of the surrounding neighbourhood. It was held on Wednesday, the 8th inst., and two following days, in Parker's Carriage Repository, St. Andrew's-street, Cambridge, which had been improved for the purpose, by the introduction of very extensive sky-lights along the principal portion of the building; still, in some parts of the exhibition, the light proved *exceedingly defective*—the consequence being, that gas-light was introduced as a substitute. In many classes, *artificial* light is by no means an equivalent for exhibition purposes; and, possibly, another season this one objection to present arrangements will be either partially or wholly removed, as the committee proved themselves most anxious to fulfil their duties, both as regarded the general accommodation of poultry, and also of visitors. With this trifling, and, perhaps, unavoidable exception, the arrangements were very complete and satisfactory. The attendance was also very good; and the great numbers of clergymen present in academical costume presented a somewhat unusual feature in such exhibitions, still, however, proving that the interest in the culture of domestic poultry was not confined exclusively to the laity of the district.

In the *Spanish* class, for adult birds, were some exceedingly beautiful specimens; whilst in the chicken, the competition was excellent: in the "single class" of this variety (for a cock of any age), it has very rarely been our lot to see a more perfect bird than the successful one, the property of the Hon. Mrs. Astley, of Thetford; it was, however, speedily "claimed" at the entrance price (four pounds), and could afterwards have been disposed of for a much higher sum. In the class for single Spanish hens, the competition was lamentably deficient, and the prizes were, therefore, withheld.

The display of *Grey Dorkings* was magnificent, the Rev. James Boys, of Biddenham Rectory, taking the highest premiums in both the adult and chicken classes. It is impossible to speak more highly than deserved of the successful birds, whether we consider the size or plumage as objects of especial attention; nor do we ever remember to have seen nearly fifty pens of Dorkings so *generally* deserving; the two pullets in the chicken-pen of the second prize birds were, undoubtedly, the best that have as yet competed for public favour; and, had the male bird been equal in character, most probably would they have been not only successful at Cambridge, but also at whatever show they might have contested. The improvement in the Dorking classes, during the few last years, presents, perhaps, the best proof that could be adduced of the high opinion of agriculturists of this variety, and also the importance and results of careful and attentive selection of brood-stock. A dry, warm soil, is, however, quite essential to success in their production; for on low, ill-drained, cold land, degeneracy speedily ensues. The *White Dorkings* were very indifferent, and shown in bad condition.

The *Cochins* were very superior;—specimens from almost all of our principal breeders abounded, and numbers changed ownership, the extravagant demand of past days not being

here insisted on, and their advantages as winter layers as universally acknowledged. In the single cock class, the winner was a most commendable specimen, from the stock of Mr. Charles Punchard. In the like class for single hens, a reference to our subjoined prize-list will best attest their general superiority; and not a few were speedily "claimed" of such birds as would be a high credit to any poultry-fancier.

The *Brahma Pootra* classes were well filled, contained many good specimens, but the darker pencilled varieties seemed to hold position in preference to their lighter coloured rivals.

The *Game* classes were excellent; never were there more brilliant displays of highly-bred specimens; true to feather, well matched, and for condition, perfection; consequently, the most minute inspection must have attended the awards; for, as our readers will perceive, that *many* almost universally successful birds elsewhere, here only obtained "high commendations." The attention of exhibitors in this class, seems, at length, fully directed to our oft-repeated observations as to *matching* birds for exhibition; and the almost faultless perfection, in this particular, of the *Game* fowls, was the subject of many a eulogy from breeders of this variety; a class always attractive to the public eye, from the matchless beauty, high martial carriage, and indomitable crowings. At Cambridge, around these pens there was no lack of admirers, and they appeared the most interesting feature in the exhibition. A few very superior pens, however, proved a hen short, from the ill-judged plan too frequently resorted to of placing birds unknown to each other (or only partially so), in the same pen for competition. This plan, if pursued in the *Game* classes, causes a result that is all but inevitable, one or other of the inmates speedily becomes perfectly *scalped*; her indomitable tormentor being changed into a relentless and infuriate vixen, by the noisy excitement that prevails around, if they have not previously, for a considerable time, been perfectly acquainted. No efforts of a committee, however carefully devised, can ever prevent such a contingency; the brutal persecution of one hen still continuing towards her fellow, even under the very eye of an attendant, and the injuries just described as frequently being the result of only one single attack. When hens have been thus maltreated, it is very rarely they recover; and even should they, for "show fowls" they are no longer of the slightest value; therefore, with highly-bred birds, it is always very inadvisable to thus attempt the reconciliation of comparative strangers.

The *Malays* were, as a whole, indifferent; and the *Hamburghs* could not boast of the perfection we see in the more northern districts. Two or three "hen-tailed cocks" were exhibited in the Silver Hamburgh class, but proved unsuccessful.

The *Silver Polands* were perfect birds, as a whole class, the other varieties not so; indeed, from the latter, not a few premiums were withheld.

The *Turkish fowls*, in the extra class, were very curious and interesting specimens, particularly clean, and their novelty caused them many admirers. This "extra class" was unusually filled with excellent and unique specimens; so much so, that, at the request of the judges, the number of advertised premiums were here doubled; consequently, Andalusians, Black Hambro's, White Polands, Black Polands, and "Frizzled Fowls," each were noticed for prizes, or commendations.

Mr. Leno, of Hemel Hempstead, took the first prizes in both Golden and Silver-laced *Bantams*. The *Black Bantams* were far superior to those generally exhibited; the *White Bantams* were also very good.

All the *Duck* classes shone conspicuously, the *Aylesbury* ducks especially; indeed, several of the pens containing only a drake and two ducks, when weighed by the judges, proved upwards of twenty-one pounds the three, and the first prize birds nearly twenty-three pounds.

In *Geese*, the competition was equally apparent; the first prize birds (*Emdbons*) proved fifty-seven pounds weight; but it was the *Turkey* class that was the most distinguishing and prominent feature in the whole exhibition. Cambridgeshire, ever notorious as a county for *Turkeys*, proved its credit is not ill-bestowed, as the weights of this year's birds will sufficiently demonstrate; they were as

follows, 53lbs., 50½lbs., 50lbs., and 48lbs. When it is considered these birds were still growing, their unusual size will be at once apparent, and their plumage was all that could be desired. In striking contrast, a pen of American Turkeys, winners of the third prize, attracted great admiration, and very rarely have such beautiful specimens of this magnificent bird been brought before the public, their peculiarities and highly metallic plumage rendering them very conspicuous. The Turkeys were exhibited in pens of one cock and two hens.

The three *Cottager's prizes* were secured by a pen of Spanish, one of Cochins, and the third of Aylesbury Ducks, all creditable birds, and in good condition.

In conclusion, it rarely has been our lot to visit a better conducted exhibition; extreme cleanliness existed throughout the whole; and though the first Poultry Show yet held at Cambridge, it certainly reflects very high credit on the well-matured plans of the body of gentlemen who conducted its general arrangements.

JUDGES.—E. Hewitt, Esq., Birmingham; Mr. Bailey, London; and Mr. Catling, London.

Class 1.—SPANISH.—Exceeding one year old.—6. First prize, Miss Shaw, Rongham Rectory, Bury St. Edmund's. 9. Second prize, Honourable Mrs. Astley, Melton Constable, Thetford. 5. Third prize, W. Plummer, Brislington, Bristol. *Highly Commended*.—George Botham, Wexham Court.

Class 2.—SPANISH.—Chicken of 1854.—24. First prize, William Saunders, Egypt House, Cowes, Isle of Wight. 14. Second prize, W. Plummer, Brislington, Bristol. 15. Third prize, W. Plummer, Brislington, Bristol. *Highly Commended*.—11. George Botham, Wexham Court, Slough.

Class 3.—SPANISH.—Best Cock of any age.—29. First prize, Hon. Mrs. Astley.

Class 4.—SPANISH.—Best Hen of any age.—Prize withheld.

Class 5.—DORKINGS (Coloured).—Exceeding one year old.—35. First prize, Rev. James Boys, Biddenden Rectory, Cranbrook. 38. Second prize, Edward Terry, Aylesbury. 36. Third prize, W. G. K. Breavington, Hounslow, Middlesex. (The class commended.)

Class 6.—DORKINGS (Coloured).—Chicken of 1854.—51. First prize, Rev. James Boys, Biddenden Rectory, Cranbrook, Kent. 57. Second prize, Robert Loder, Crawley, Sussex. 59. Third prize, W. G. K. Breavington, Hounslow, Middlesex. *Commended*.—43. Capt. W. H. Squire, Mildenhall. 46. George Botham, Wexham Court, Slough. 64. Thomas Dutton, Streatham Common, Surrey. 65. Thomas Dutton, Streatham Common, Surrey. 71. Rev. E. H. Kittoe, Chadwell Rectory, Grays, Essex. (The whole class highly meritorious.)

Class 7.—DORKINGS (White).—Exceeding one year old.—Disqualified.

Class 8.—DORKINGS (White).—Chicken of 1854.—82. First prize, Firman Fuller, March, Cambs. 80. Second prize, Joseph Cliff, Dorking. Third prize withheld.

Class 9.—DORKING.—Best Cock of any age or colour.—83. Prize, Miss Shaw, Rongham Rectory.

Class 10.—DORKING.—Best Hen of any age or colour.—Prize withheld.

Class 11.—COCHIN-CHINA (Cinnamon or Buff).—Exceeding one year old.—97. First prize, John Fairlie, Cheveley Park, Newmarket. 89. Second prize, Rev. Arthur Gilbert, Grimstone, King's Lynn. 92. Third prize, F. C. Steggall, Weymouth.

Class 12.—COCHIN-CHINA (Cinnamon or Buff).—Chicken of 1854.—110. First prize, William Sanday, Holme-Pierpoint, Notts. 109. Second prize, Charles Punchard, Blunt's Hall, Haverhill. 111. Third prize, William Sanday, Holme-Pierpoint, Notts. *Highly Commended*.—103. Rev. Clement Gilbert, Henshy, Great Yarmouth. *Commended*.—115. John Taylor, jun., Spring Grove, Hounslow. 126. John Fairlie, Cheveley Park, Newmarket. 127. John Fairlie, Cheveley Park, Newmarket.

Class 13.—COCHIN-CHINA (Brown or Partridge).—Exceeding one year old.—133A. First prize, James Garrod, Cheveley, Cambridgeshire. 132. Second prize, J. F. Chater, Haverhill. 133. Third prize, Mortimer Ford, Trinity College, Cambridge.

Class 14.—COCHIN-CHINA (Brown or Partridge).—Chicken of 1854.—138. First prize, James Garrod, Cheveley, Cambridgeshire. 136. Second prize, John Fairlie, Cheveley Park. 135. Third prize, Thomas Bridges, Croydon, Surrey.

Class 15.—COCHIN-CHINA (White).—Exceeding one year old.—141. Second prize, John Fairlie, Cheveley Park. First and third prize withheld.

Class 16.—COCHIN-CHINA (White).—Chicken of 1854.—143. First prize, John R. Rodbard, Aldwick Court, Bristol. 142. Second prize, George Botham, Wexham Court. Third prize withheld.

Class 17.—COCHIN-CHINA (Black).—Exceeding one year old.—No entries.

Class 18.—COCHIN-CHINA (Black).—Chicken of 1854.—154. First

prize, John Fairlie, Cheveley Park, Newmarket. 153. Second prize, Isaac Jecks, Trowse Lodge, Norwich. 147. Third prize, George Hutchinson, Charlton, Malmesbury. *Commended*.—148. W. B. Mapplebeck, Birmingham. 149. W. B. Mapplebeck, Birmingham.

Class 19.—COCHIN-CHINA.—Best Cock of any age or colour.—159. Prize, Charles Punchard, Blunt's Hall, Haverhill.

Class 20.—COCHIN-CHINA.—Best Hen of any age or colour.—169. Prize, James Ivall, 96, Camden-road Villas, Camden Town. *Highly Commended*.—157. William Sanday. 173. J. F. Chater, Haverhill. 176. Captain Snell, St. Swithin's-lane, London. 179. John Fairlie, Cheveley Park. 181A. Rev. Arthur Gilbert.

Class 21.—BRAHMA POOTRA.—Exceeding one year old.—183. First prize, William Cust Gwynne, M.D., Sandbach, Cheshire. 185. Second prize, John Fairlie, Cheveley Park. Third prize withheld.

Class 22.—BRAHMA POOTRA.—Chicken of 1854.—203. First prize, Thompson Webb, 109, Tottenham Court-road. 190. Second prize, George Botham, Wexham Court. 200. Third prize, William Cust Gwynne, M.D. *Highly Commended*.—191. Henry Peek, Haverhill. *Commended*.—194. William H. Green, Aylesbury. 196. W. G. K. Breavington, Hounslow.

Class 23.—BRAHMA POOTRA.—Best Cock of any age.—216A. Prize, Charles Punchard, Blunt's Hall. *Highly Commended*.—211. F. C. Steggall, Weymouth. 213. Robert H. Bush, Lansdowne, Bath. 218. John Fairlie, Cheveley Park. 219. John Fairlie, Cheveley Park.

Class 24.—BRAHMA POOTRA.—Best Hen of any age.—22. Prize, Robert H. Bush, Lansdowne, Bath.

Class 25.—GAME (White and Piles).—Exceeding one year old.—230. First prize, James Monsey, Norwich. 233. Second prize, Rev. T. L. Fellowes, Beighton Rectory, Norfolk.

Class 26.—GAME (White and Piles).—Chicken of 1854.—235. First prize, William Groom, Holt, Norfolk. 240. Second prize, George Ellis, Bury St. Edmund's. *Commended*.—236. William Groom, Holt.

Class 27.—GAME (Black-breasted or other Reds).—Exceeding one year old.—243. First prize, Edward H. Strange, Ampthill, Beds. 244. Second prize, James Monsey, Norwich. *Commended*.—242. Edward Muskett, Bury St. Edmunds. 246. J. H. Symonds, Stowmarket.

Class 28.—GAME (Black-breasted or other Reds).—Chicken of 1854.—264. First prize, J. H. Symonds, Stowmarket. 257. Second prize, Thed William Pearce, Bedford. *Highly Commended*.—254. Edward Muskett, Bury St. Edmund's. 264. Henry Thurnall, Royston. 255. J. R. Rodbard, Bristol. 266. William Lucas, Hitchin. 267. William Lucas, Hitchin. 268. Christmas Backler, Cambridge. *Commended*.—251. Henry Marshall, Catgrove, Notts. 256. J. R. Rodbard, Bristol. 259. James Monsey, Norwich. (A very excellent class.)

Class 29.—GAME (Any other colour).—Exceeding one year old.—269. First prize, Henry Thurnall. 270. Second prize, J. R. Rodbard.

Class 30.—GAME (Any other colour).—Chicken of 1854.—279. First prize, John R. Rodbard. 277. Second prize, Henry Thurnall. *Highly Commended*.—278. Henry Thurnall. 281. James Monsey.

Class 31.—MALAY.—Exceeding one year old.—284. Second prize, James Cropley, Shelford. First prize withheld.

Class 32.—MALAY.—Chicken of 1854.—290. First prize, James Leighton, Cheltenham. 289. Second prize, James Cropley.

Class 33.—HAMBURGH (Golden-pencilled).—Exceeding one year old.—292A. Second prize, Thomas Newton, Cambridge. First prize, withheld.

Class 34.—HAMBURGH (Golden-pencilled).—Chicken of 1854.—298. First prize, Rev. F. W. Freeman, Little Finborough. 303. Second prize, Daniel Harrison, Singleton Park, Kendal. *Highly Commended*.—299. Rev. F. W. Freeman. 302. Rev. T. L. Fellowes, Beighton Rectory.

Class 35.—HAMBURGH (Gold-spangled).—Exceeding one year old.—306. Second prize, C. E. Coleridge, Eton College. First prize, withheld.

Class 36.—HAMBURGH (Gold-spangled).—Chicken of 1854.—315. First prize, Honourable Marian Ryder. 314. Second prize, Honourable Marian Ryder.

Class 37.—HAMBURGH (Silver-pencilled).—Exceeding one year old.—316. First prize, George Botham, Wexham Court. Second prize withheld.

Class 38.—HAMBURGH (Silver-pencilled).—Chicken of 1854.—327. First prize, George Botham, Slough. 334. Second prize, Rev. T. Lyon Fellowes. *Highly Commended*.—323. John Nichols, Ampthill. *Commended*.—330. Rev. F. B. Pryor, Bennington. 331. Rev. F. B. Pryor, Bennington. 335. Thomas McCann.

Class 39.—HAMBURGH (Silver-spangled).—Exceeding one year old.—340. First prize, Hon. Mrs. Astley. Second prize withheld.

Class 40.—HAMBURGH (Silver-spangled).—Chicken of 1854.—346. First prize, Thomas Whittington, jun. 347. Second prize, E. H. Strange, Ampthill. *Highly Commended*.—348. Rev. T. Lyon Fellowes.

Class 41.—POLAND (Black, White Crests).—Exceeding one year old.—349. First prize, G. W. Boothby. Second prize withheld.

Class 43.—POLAND (Golden).—Exceeding one year old.—354. First prize, Robert Bush. Second prize withheld.

Class 44.—POLAND (Golden).—Chicken of 1854.—356. First prize, C. E. Coleridge. 361. Second prize, W. G. Vivian.

Class 45.—POLAND (Silver).—Exceeding one year old.—363. First prize, E. H. Strange. 364. Second prize, P. Jones. *Highly Commended.*—362. G. W. Boothby.

Class 46.—POLAND (Silver).—Chicken.—371. First prize, P. Jones. 366. Second prize, C. E. Coleridge. *Commended.*—369. James Monsey.

Class 47.—ANY OTHER DISTINCT BREED.—376. First prize, Rev. T. R. Rumsey. 383. First prize, John Nichols. 387. First prize, Thomas Dutton. 391. First prize, Miss Watts. *Highly Commended.*—379 G. W. Boothby. *Commended.*—399. W. G. Vivian.

Class 48.—BANTAMS (Gold-laced).—404. First prize, M. Leno. 413A. Second prize, Henry Sherrar. *Highly Commended.*—405. James Monsey. 411. Hon. Mrs. Astley.

Class 49.—BANTAMS (Silver-laced).—417. First prize, M. Leno. 418. Second prize, James Monsey.

Class 50.—BANTAMS (White).—422. First prize, James Monsey. 424. Second prize, Rev. P. Gurdon.

Class 51.—BANTAMS (Black).—432. First prize, Rev. P. Gurdon. 430. Second prize, James Monsey. *Highly Commended.*—429. M. Ridgway.

Class 52.—BANTAMS (Any other colour).—434. First prize, Rev. T. Rumsey. 440. Second prize, C. M. Mottram. *Commended.*—439. W. G. Vivian.

Class 53.—DUCKS (White Aylesbury).—457. First prize, Mortimer Ford. 443. Second prize, W. G. Breavington. *Highly Commended.*—449. J. K. Fowler. 450. J. K. Fowler. *Commended.*—444. W. G. Breavington. 445. Miss Shaw. 448. E. Terry. 452. John Weston.

Class 54.—DUCKS (Rouen).—461. First prize, T. W. Pearse. 463. Second prize, C. Punchard. *Highly Commended.*—465. W. G. Breavington. 466. J. Fairlie. (Aylesbury and Rouen Ducks highly meritorious.)

Class 55.—DUCKS (Any other variety).—468. First prize, Captain W. Squire. 469. Second prize, G. Botham. (Buenos Ayres Ducks highly meritorious.)

Class 56.—GESE.—481. First prize, W. G. Breavington. 482. Second prize, E. Terry. *Highly Commended.*—484. J. Fairlie.

Class 57.—TURKEYS.—Exceeding one year old.—487. First prize, Richard Brand. 492. Second prize, J. Fairlie. 491. Third prize, Rev. H. Owen. *Highly Commended.*—489. W. Trigg. 486. R. Brand.

Class 58.—TURKEYS.—Hatched in 1854.—496. First prize, R. Brand. 496. Second prize, R. Brand. 500. Third prize, J. Fairlie.

COTTAGERS' CLASS.—503. First prize, John Hurn, Norwich. 405. Second prize, John Cole, Shelford. 505.—Third prize, James Cracknell, Cambridge.

POMPONE CHRYSANTHEMUMS.

The following list is an alphabetical arrangement of the *Pompones Chrysanthemums* which were exhibited before the Horticultural Society, on the 7th instant, with three or four additional kinds, which were recommended to me by some of the best growers then present. The colours are changeable in some of these kinds; but I give them exactly as they appeared to me on that day. The twelve marked with a *, are my own selection from the different collections exhibited, and putting them in this form, will render a reference more easily to the best and most select kinds that were shown in 1854.

ADONIS.—A flat flower; white, tipped with red.

* ARGENTUM.—Silvery-white; the best white in this class; adapted for wreaths and nosegays.

* AUTUMNUM.—The most singular colour ever seen in a flower, like a deep brown shot-silk. An extraordinary free bloomer. The colour is the same dead or alive.

CEDO NULLI.—A flat, white flower, tipped with rose. A lively flower.

* DRINE DRINE.—A fine yellow flower, and prolific bloomer; growth very compact.

FENELLA.—A small, bright yellow flower; and looks at a distance as if slightly fringed.

GERALDO.—Light blush, with a creamy-white centre.

GREZIELLA.—Pinkish, or shaded pink flower.

HENRIETTA LEBOS.—A flat flower; lilac and purple.

* JONAS.—Said to be very distinct. A pale bronze flower.

LA VOGUE.—Said to be a first-rate yellow.

* LAIS.—A beautiful dark purple kind.

* LE NAIN BEBE.—A beautiful rich blush, and the sweetest scented of this tribe.

LOUIS PITON.—A fine blush, and free bloomer.

LOUISE MELLIEZ.—A shaded yellow.

* MIGNONETTE.—Orange-brown; colour of the anthers of the Mignonette; very dwarf plant.

MINON or NINON.—Blush, tipped with purple.

* MODEL or MODELE.—A creamy-white; fine.

* POUDELETTE.—A lilacy-rose; very distinct.

* PRESIDENT.—Dark purple, shaded with pink. The best of all the deep-coloured ones; the growth rather strong; it should be stopped later than the rest, say in the middle of July.

RENONCULE.—Reddish-pink, and fine shape.

* SACRAMENTO.—Allowed to be the best of the yellows.

SOLFATERRE.—Bright primrose-yellow.

* SURPRISE.—A rich deep blush flower; my own especial favourite, and the most lady-like of all the Pompones.

Next to *Surprise*, *President* is my choice, then *Sacramento*, after that six or seven claim equal shares in my *sanctum*; but Mr. Robinson, the best grower of them in England, told me that *La Vogue* and *Jonas* were as good, if not better, than my choice; and that if I had seen *Mignonette* in first-rate style, I could not help liking it. Then there is

HENDERSONII.—A clear yellow flower, and comes in full three weeks before any of them, which is a great thing for country gardeners, where the early frosts overtake them in bed and bedding. These yellow and brownish-yellow flowers, with the purplish ones, stand the frost better than the white and blush ones, and therefore, are the best sorts for filling up choice beds near the window. In mild seasons, like this, little plants of them can be grown without pots, in the borders of the kitchen-garden, till the Geraniums are taken up, and then they will transplant, even if they are in bloom, if the roots were cut round by the middle of September, and a good watering or two after transplanting. For flower-vases, or boxes, about doors or windows, they are admirably fitted, and they will keep much longer in flower than in the greenhouse. I have the finest masses of *Hendersonii* I ever saw, in a box, outside the window, for the last five weeks, and now they look as fresh as ever; but the plants were of first-rate growth, and coming into bloom before I had them, and they cost 2s. a piece, a full dozen of them, which were kindly presented to me, and I am so well pleased with them, that I mean to have a dozen, or a dozen and a half of the best kinds before this sees the light.

D. BEATON.

ADMISSION OF COTTAGERS TO SHOWS.

MUCH has been said, and even written, and much more remains to be done, with regard to that industrious class, the Cottage Gardeners. The horticultural shows now closed testify that they are not to be despised. But why hold out the inducement to strive, and after all the toil, trouble, and anxiety, not permit them to enter until the Society's people have commenced clearing away? What delusion, what mockery of any society, to call this encouragement! Are they to be treated as the Goths and Vandals, whose very presence are ruinous. We every day hear of our palaces and works of art being thrown open, and what is the result? Is any serious loss thereby sustained? Surely, then, those Societies which hold out the flattering allurements of every encouragement given to the cottage gardener may here take a lesson. What loss can they sustain by admitting that class, when that class can only profit by the eye in witnessing the merits of the class above them.

I trust these strictures, although severe, are given in all friendliness, and in the hope that another year may bring forth reforms more truly English. Let true cordiality exist, and let not the blue apron be ashamed of his humble rival—the cottager.—BASIL FERRAR, *St. George's-street, Stamford.*

SIGNOR CARLO MINAS'S PATENT HYDRO INCUBATOR.

HOW TO SET THE INCUBATOR FOR USE.

HAVE some water heated to about 113° or 116°, with which fill the machine; to do this effectually, lift the end where the

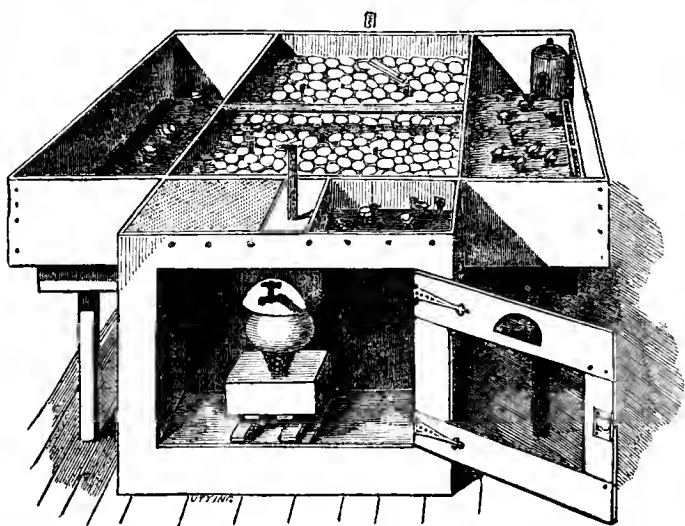
thermometer is placed, and thus the air will escape, so that a greater quantity of water can be supplied. Strew the frame in which the eggs are placed with silver-sand a quarter of an inch deep. Cut a blanket the size of the zinc tray, which lay on the top of the eggs. In order to avoid the necessity of removing the blanket, it is as well to cut a few inches out of it, top and bottom, so that the thermometers may be at all times seen without trouble. Another blanket should then cover the whole of the outside of the glass frame.

Place under the zinc tray some hay cut in small pieces, with a little gravel or sand, and change it every other day.

The burner requires heating by external means before it can be lighted. To do so, fill the small cup in three parts full of spirits of wine, and light it; a flame is thereby obtained all round the burner, and the desired heat is attained. This heat will soon generate sufficient gas to issue from the escape-hole, pass up the interior of the air-tube, whence it will combine with atmospheric air, and issue from the orifices around the top of the burner, which may then be lighted. Care should be taken that every jet is lighted, otherwise the escape will emit a disagreeable smell. It will sometimes happen, during the process of heating the burner, particularly when the lamp has been new stuffed with cotton and abestos, that a liquid instead of a vapour will escape from the hole; but this may be disregarded, as it will cease when the burner is hot. After it has burned for a minute or two, the lamp may be regulated to any heat required, by means of the key, care being taken that the vent-hole through the feeding-screw is open. If the small escape-hole should get stopped from the use of impure spirit, or any other cause, and which will be readily detected by the small, imperfect light, or by the gas being prevented from issuing from the orifices, although the burner be heated, it may be remedied by using tool No. 3, or tool No. 4; when No. 3 is used, put the light out, take the top screw out, and turn the top, so as to have the vent-hole open, and let the needle go through the escape-hole. When No. 4 is used, it is better to put the light out, for fear of the gas, which may escape from the vent-hole igniting. Should the gas, however, ignite at the vent-hole, close the vent, and light the lamp again, after using tool No. 4, being careful to give as near the same light again as possible. Should the flame be extinguished for the space of not more than three months, it will require very little spirit in the cup to relight it.

Three thermometers are required, two to be embedded in the sand (one at the top, and the other at the bottom of the machine), the third to be put in the water, and they must all three be got as near as possible to 104, but never higher.

Place the lamp lighted, on the stand at a distance of about three inches from the boiler, and regulate its flame so as to obtain a heat of about 104. It will take one hour before the room, machine, sand, glass, &c., are at the same temperature; but it is always desirable to keep the machine going for two hours, to ascertain that the temperature is even before putting in the eggs. After the heat has been once regulated by the lamp, the flame should not be increased or diminished, but in the event of the loss or gain of a degree of heat, raise or lower the lamp, as occasion may require, by means of the screw level with the stand, being careful, however, when the desired heat is attained, to lower the lamp again. Should a degree or two of heat be lost during the night, and the lamp have been already raised to the greatest height obtainable, it is of little consequence, and need cause no anxiety; but to gain a few degrees will, most probably, spoil the eggs. The morning is, of course, the best time for altering and regulating the lamp, in order that any little irregularity may be the sooner and more readily detected and corrected. A small blue light will give greater heat than a large white light, and if the lamp should give such, calculate accordingly. Should at any time the heat increase above the given temperature (104), the glass, blanket, and lamp, must be immediately removed, for such space of time until you observe the thermometer in the water fall to the given temperature, then cover the eggs with the blanket and



glass, and place the lamp a little lower than it previously stood.

Having got everything at an even temperature, mark the eggs on one side No. 1, and on the reverse side No. 2. The date when they are placed in the machine may be marked at either end. They may then be placed on the sand, with No. 1 upwards; twenty-four hours afterwards they should all be turned, so that No. 2 be upwards. The best time is about eight or nine in the morning. Do not needlessly take the eggs out of the machine. At the end of the sixth day that the eggs have been in the machine it may be ascertained if the chicken is formed or not, by darkening the room, and holding them against a hole the size of a shilling, cut in the shutter for the purpose, when, if the egg be gently turned, the germ will be seen to float to the top. (See Minasi's Guide to his Patent Hatching Machine.) If no germ appears, the egg may be considered a bad one for hatching purposes. A bit of soft leather should be placed round the hole, against which the egg may be held without fear of breaking. If the shell be a dark one, it will not be until the seventh or eighth day that this can be known. It requires a little practice before the eye becomes sufficiently experienced to detect this. The great advantage which science has over nature is here apparent, for, if by the sixth day no chicken is visible, the egg may be at once removed as containing no germ, and its place filled by another. Eggs with lighter shell, such as Spanish, Poland, Sultan's fowls, &c., the chicken is seen clearly after the fourth day. If at the end of twenty-one days, and doubt should exist as to the vitality of the chicken then due, fill a basin nearly full of water heated to about 104 or 106, and place some eggs gently in it. When the water is quite still, the eggs that contain live chicken will be seen to move about, and should be immediately replaced in the machine, and allowed another day or two more. When buying eggs for hatching, have a pail of water, in which place them, and observe if they lie flat at the bottom; if they do so, they are good for hatching; but if one end rises higher than the other, they will not answer the purpose; and should they float to the surface or near it, they are rotten. Another method of telling new laid eggs from stale ones is by examining them at the hole in the shutter. If there appears at the thick end a vacuum about the size of a fourpenny-piece only, the egg may be considered new laid, or only two or three days old; but if the vacuum be greater, the egg is a stale one.

When the chicken commences to star the shell, it is better to remove it to the glass box at the end, with a little flannel laid lightly underneath, and the same to cover over it, as, if allowed to remain in the sand, they sometimes injure their eyes. The chicken may be allowed to remain in the glass box for the first twenty-four hours of their existence. They should then be removed to the artificial mother, where they will shift for themselves, and should remain about five or six weeks. If a chicken appears weakly for the first two or three days, it is, perhaps, as well to put it in the glass box, away from its more robust companions, under the artificial mother, giving them, of course, a little food.

[Such is Signor Minasi's description of his Incubator, and we have abundant evidence that it is an efficient hatcher of chicken. No one ever entertained a doubt upon this point; for from the egg-ovens of Egypt, down to Cantello's Incubator, there have been abundance of evidence that artificial hatching is not a very difficult achievement. The difficulty commences after the chicken has been hatched. We are aware that Signor Minasi has some ingenious "artificial mothers" for brooding the chicken, but even with their aid, how many chicken out of every hundred, can, on the average, be reared until fit for the spit? Nor do our queries stop there; for of the most successful user of the Incubator, we would ask—Which is the cheapest mode of hatching and rearing chicken—by these machines, or by hens? We have heard that Sir John Thorold, Bart., of Syston Park, Grantham; Sir George Nugent, Bart., of Harling; Charles Appleyard, Esq., of Harrow; the Rev. D. Capper, of Huntly Rectory, Gloucestershire, and several other gentlemen, have had the Incubator in operation during the present year, and we should like to hear from them all, whether, after such experience, they recommend their friends to become purchasers of an Incubator?—If they do, then Signor Minasi will have the best evidence in his favour that he can adduce.]

DOUBLE DAISIES.

SEEING that there is a prevailing desire to possess the more beautiful kinds of double Belgian Daisies, I would mention a plant but little known, and less cultivated; it is the "*Pittadinia lobata*," a plant akin to the common Daisy in its flowers, but different in habit, as it grows like the *Cæli rosea*, or the Forget-me-not, to the height of six or nine inches, and is covered with its red and white blossoms nearly all the year round. It is called "*Australian Daisy*," and "*Brachycome triloba*," by some botanists. Now, if this could be made to produce double flowers, like the new Belgian ones, by being hybridized, the plant would be a valuable addition indeed to our gardens.—S. P., *Rushmere*.

QUERIES AND ANSWERS.

GARDENING.

ROSES NEAR A MANUFACTURING TOWN.

"My house and garden were once in the country; alas! I can say that no longer; they have now become part of the suburb of a manufacturing town, which every year enlarges its boundaries.

"The house faces east, or east by north; subsoil of the garden is cold clay; the town lies to the north-east, and, consequently, north and north-east winds bring a murky atmosphere upon me. I have the advantage, however, of standing some sixty or seventy feet above the level of the town, but to balance this, I am surrounded very much by forest trees, which, though many of the worst, Ashes, &c., have been cut down, still exercise an unfavourable influence upon my flowers; besides which, sundry tall chimnies behind my house (my own, by the way, so, perhaps, I should not complain) give me a disagreeable sense of their presence when the wind lies in the west, or south-west. On them, however, I have been able lately to place some cheek, by causing some to consume their own smoke, and where this was not practicable, raising them many feet, so that now what smoke there is passes over my head and vanishes.

"With these explanations, you will not be surprised that I cannot succeed with my Roses. Perhaps, the wise thing would be to give them up *in toto*, and grow Hollyhocks, or anything else; but, of course, as I cannot have them without difficulty, I am especially fond of Roses, and I am resolved to make one more trial. What I want, therefore, to know, is, how far you think the plan, which I propose, likely, under the circumstances, to be successful?

"The front of my house (looking east) is covered by a trelliss, filled *thinly* by *Rosa ruga*, *Noisette grandiflora*, *Caroline Maria*, *Madame Laffay*, and a common *China*,

The border in which these are growing is, I find, garden-soil, almost pulverised, and always dry from the projection of the roof of the house, which prevents any rain, but a driving one from the east, from touching it. *Ruga* has been there seven years, and at first flowered; but it is now weak at the bottom, and has but few flowers at the top. *Grandiflora* has been planted three years, and not till this year has shown any signs of vigor; but, much to my astonishment, has perpetrated the feat of sending up some very long shoots, though only bearing one or two flowers; the *China* Rose does not get on a bit; and though planted five years, is hardly higher than when first put in. *Caroline Maria* has not been long planted; ditto, *Madame Laffay*, which flowered abundantly last year, and has contented herself this year with making wood. My intention is, then, to take out the soil from this bed, say a spade deep, and to fill in with a compost of marl, fresh loam, and cow-dung, in equal parts, cutting the Roses down to six or seven feet (they are now twelve or fourteen feet); by this means, I hope to keep the roots cool, and fairly moist, and give them a chance of putting out growing bearing shoots from the bottom. What are the odds that I shall succeed?

"My standard Roses hardly prosper so well as those on the house beyond the first year of planting, with the exception, perhaps, of the old *Geant des Battailles*, and this year, *Pierre de St. Cyr*. After the first year, many of them make wood, but altogether refuse to flower, and this is not from want of well cutting in, either.

"These I mean to treat in a similar manner, *i.e.*, take them up, dig out the soil, and fill in with compost. I have mentioned putting a coating of rotten manure round the roots on the top outside, by way of dressing, and syringing well in the spring, as they get spotted with blacks from my enemies, the tall chimnies.—AN AMATEUR AND NEW SUBSCRIBER."

[There is, evidently, nothing but money and judgment wanted to make your place a paradise of Roses. We have Roses all round us under much greater disadvantages than yours, and they do remarkably well, with those who like them; and those who do, take care of them; and if it is really true that you love Roses, you want skill and judgment; for neither is exhibited in the way you mismanaged that trelliss in front of the house. You allowed the soil in the border to become so dry and dusty, that the *Ruga* cannot flower well in it—the hardiest of all Roses—as this was becoming evident. A *Grandiflora* was planted in the border—a bad move; then, *Caroline Maria* and *Madame Laffay* were put in; a still worse move; but the way you propose to renew the border is, by far, the worst move. You may just as well throw the money into one of the smoky furnaces. Every plant in that border must come out, and every particle of the soil, too, down to *full two feet* from the surface. When the trench is thus open, lay a drain from the lowest part of it, to carry off the sudden "flushings" from the watering pots. Every week, during the growing season, where rain cannot reach, and where moisture cannot ooze from the surrounding parts, to a border, or piece of ground, we must consider such borders as so many flower-pots, or boxes, and we must attend to them by hand watering, just as regularly and constantly as if they were real pots, or boxes. If that had been done from the first, nothing could have been better, by this time, than the first Roses. After draining, put six inches of brick-bats or stones all along the bottom; then your own compost of fresh loam and rotten cow-dung will do very well; but marl *may be* a deadly poison, or a good thing, according to the kind. There are more kinds of marl than many are aware of: that in which any traces of chalk is found will not suit Roses. After filling in the border, cut back the great, fanged roots to within eighteen inches of the stools, and let the fibry roots go at full length. To cut back the plants one-half, as you propose doing, will do very well; but some of the shoots of *Ruga* (they should all be on their own roots) are surely hard and dry; and if so, they are of no use, and ought to be cut down close to the roots. After all is finished, the grand secret is, never to let that border get quite dry any more; for if it does get quite dry, it will be very difficult to get the whole depth properly moistened.

As to Standard Roses, the chances are, that you buy them with stems twice the length they ought to be. Some Roses

never do well on tall stems, be the soil ever so good; and when soil and site, and a had bottom, come in question, no Rose, except the very coarsest, will ever do well on a stem longer than three feet; thirty inches down to eighteen inches, ought, certainly, to be the utmost length of your Roses. The following kinds, we should think, ought to answer with you, on such low stems:—*Pius the Ninth, Baron Prevost, Auguste Mié, Madame Laffay, William Jesse, Geant des Batailles, Duchess of Sutherland*; and as *Pierre de St. Cyr* does so far as make wood with you, try a few more Bourbons, such as the *Queen of Bourbons, Souvenir de la Malmaison, Armosa, Comice de Seine et Marne* and *Edouard Defosse*. If you could get these on their own roots, however, they would be more likely to answer than on standards. When difficulties, such as yours, meet a gardener in the face, his first resolve is to give up all ideas of worked plants; and if they do not succeed on their own roots, they "won't anyhow." When making holes for these, give up that idea of "one spade deep" altogether; three spades deep will do better in your clay bottom, if you can get rid of bottom-water. In every other respect, you seem to know the right road as well as we can tell you, unless, perhaps, about the pruning, and as to that—the law is, that when Roses, or Apples, or Lilacs, or other plants do not look healthy, the pruning should be done as soon as the leaves fall in the autumn; and if they are too strong, then, to delay the pruning till March; when plants are "half-and-half," the weak shoots are pruned late in the autumn, and the very strong ones not till late in the spring; then the weak and the strong start on equal terms;—the buds on the weak shoots are a month in advance of those on the strong shoots by this style of pruning.]

SOIL FOR LILIUM LANCIFOLIUM.

"What is the best soil to grow *Lilium lancifolium* in? and is it necessary to repot and disturb the bulbs every year?—J. C."

[About two parts turfy peat, and one part light, sandy loam, will grow the Japan Lilies to perfection in pots, if they are rightly attended to in other respects; full-sized flowering-bulbs of them, when once settled in large pots ought not to be disturbed for four years, at least. At first, when every morsel of root was valuable for increase, people turned their large bulbs out every season, in order to get the increase; but for private use, the plan is bad; bad on the face of it. Drain well, and make four years the standard for shifting these bulbs.]

A DOUBLE VINERY.

"We have this last spring built a small Vinery, or rather a double house, with a double front-wall, with sliding sashes in front. The Vines are planted between the walls. The Vines are to be taken out at winter, and the sashes to be put on the inner wall. We have a pit in each house; one I have had Cucumbers and Melons in. The Cucumbers have done very well, but the Melons will not ripen, not being sufficient heat. Can I grow *early Potatoes* in that pit? and when is the best time to plant them? If not, will any one be kind enough to tell me the best use I can make of it in the winter? The Vines are quite young; we shall not take them in very early in the spring. When is the right time to take them out of the house? I have some cuttings of different kinds; I shall want heat in cold nights. I have, also, a very healthy *Apricot-tree* against a stone wall; but it does not bear, though it has been planted nearly four years from the nursery. It is very strong in growth. Can I move it against a cob-wall? and if so, when is the best time?—A YOUNG BEGINNER AT FOREING."

[It is one of our greatest pleasures to solve the difficulties of all such beginners as you; but then, we must clearly understand the premises, before we can come to a clear conclusion. The other week we had some queries from a clergyman, a very pattern for clearness of object, and clearness of expression. Such vividness is not to be expected from the generality of working gardeners, but all of them should strive after attaining it. To think and reason clearly, and then to express their thoughts and ideas intelligibly and clearly, will ever be to them of great importance in their journey through life. On this account, alone, we hope that

the admirable Essays to "Young Gardeners," by our friend, Mr. Appleby, will be earnestly considered and acted upon by them.

Now, we have a very dim perception of your *double house*, with double pits, and double front-walls, and, we presume, one set of front sashes for both, especially when all comes under the denomination "*small*." Three upright strokes, showing the position of your three walls, the width between them, and the mode of heating, and the position of the Vines, with another line for the sloping roof glass, would have made all intelligible. As it is, we are left in doubt, whether you have got a very *wide* house, with two pits contained in that width, and the Vines planted between them, and so managed, that you can bring the stems out of the back-house in winter, and place them under the roof in the second, or front-house, which then becomes useless for all purposes during winter, save keeping the Vines dry, as the front-glass would be removed to place on the middle wall. In such a case, with plenty of heat, you may grow what you like in the northern house. But, if by *double house*, you mean a house in two divisions, longitudinally, and that your two front walls are near each other, say a foot, or eighteen inches, or more apart, and that there the Vines are to be exposed in winter, having merely the protection of the roof above—the front-glass being placed behind them instead of in front of them—then, not only would the arrangement be a good one, if you designed to have a high temperature in winter, or to force *very early*, but you would not lose any room for growing or storing plants. Let us add here, nevertheless, that, however advisable such a plan, that it was quite unnecessary, if you did not contemplate having any thing in your houses during winter requiring a higher temperature than from 40° to 45°. As it is, having pots, and, we presume, a sufficient command of heat, you might commence Cucumbers and Melons much more early than you might choose to introduce your Vines. We are here, again, a little in the dark; because the same temperature that would ripen the fruit in the wood of Vines in summer, and grow Cucumbers well, should have ripened Melons, if early enough planted to have the full benefit of the sun of this past season, with only a moderate supply of other heat. We have grown very fine Melons, and Cucumbers, too, in Vineries, where we could get an open space; but, then, however distant the roots might be, the leaves were within fifteen inches of the glass. In the circumstances, we can only say, that with very little heat in your beds, and the frost kept out by artificial heat, you may grow good crops of *early Potatoes* by planting *now*, and they will be gone before you want a high temperature for your Vines. *Radishes, Carrots*, and many other things might be grown; and if you felt disposed to go to a temperature approaching 60°, you might, in a week or two, plant them with *early French Beans*; or, if you could conveniently bring the pots near the glass, fill the place in a month with *Strawberry-pots*. The Vines may be taken out as soon as the wood is firm, and the leaves begin to change colour. By taking the Vines outside, you may grow anything in the pits you set your mind upon; from a plant requiring the protection of a cold pit, to one demanding a tropical climate; but then, you must limit one house to one class, and can grow tender things then just according to the heating powers at your disposal.

We would carefully take up the *Apricot-tree*, saving every possible root, and replant it in a similar position,—that will check it enough: syringe the foliage for a few days afterwards, if sunny.]

HEATING FIVE STRUCTURES WITH ONE BOILER.

"It is proposed to erect a range of houses one hundred and fourteen feet long, divided as follows:—Pine-pit (No. 1), twenty-one feet long; Vinery (No. 2), thirty-one feet long; centre house, or conservatory (No. 3), ten feet long; Vinery (No. 4), thirty-one feet; and Pine-bed (No. 5), twenty-one feet. Can these houses be heated with top and bottom-heat, except No. 3, that with top-heat alone? Can all be heated separately with top and bottom-heat, or with bottom-heat alone? and can the mode of heating be such that I can heat any one I choose, either with top or bottom-heat, or with bottom-heat alone?—J. S. L."

[No doubt of it. You could do all this if you were to heat every house separately; but though you do not say so, we presume you mean to do all you propose by means of one boiler to the range; and though that can be easily done, by placing the boiler in the most convenient place, there will be great expense, and what we should call waste in material in connecting each place with the border separately. And yet this you must do, according to the present arrangement. We do not think you will get much pleasure from your ten-foot conservatory. We would give the space to the two Vineries, and one of them might be a conservatory in winter, if you liked. Then, supposing we had two furnaces instead of one, we would place each where the Vinery and the Pine-stove joined, and by valves and plugs it would be easy to heat them independently of each other. To do this with the conservatory, you must either take the pipes through the Vinery, or along the back of it outside. To heat such a range effectually, and conveniently, by one boiler, would require a large one placed at the end of the Pine-house—the two Pine-houses being together. That house always to receive most heat, with stop-cocks and valves to allow top and bottom-heat at pleasure to go to the next Pine-house. The same process would be repeated before you could heat the first Vinery, and the same, again, before you could heat the second, which thus must be your last house. The defect of this plan is, that you could not heat No. 2 without heating No. 1, nor No. 3 without heating both, and so on. We should prefer having two boilers, and then the range may remain as it is, though it is always more convenient to have the Vines together.]

FUMIGATING WITH TOBACCO.

"I beg leave to inform you, for the benefit of your correspondent 'F. G.' (who asks about fumigating plants with tobacco), of the means I use for fumigating, which I find most efficacious:—I have a 'Carman's' Stove, purchased at 120, Newgate-street; at the bottom of it I place some lighted charcoal, to the depth of about four inches, and then I put in some brown paper, and about a quarter of a pound of tobacco, damped; and then I place it in the centre of the path of the greenhouse (a span roof), and from the ventilator at the top of the stove, if turned on either full or half-way, will emit a cool ascending stream of smoke, which will quickly fill the greenhouse. When I require to use a fumigator for a single plant, I use 'Brown's Fumigator,' which answers well. The fumigating by the stove will require, to do it effectually, to let it be done one night, omit one, and then do it the night following. — G. SMITH, *Dalston*."

[We have several other modes sent to us, which we will publish next week.]

COBCEA SCANDENS AGAINST A SOUTH WALL.

"I have two of this beautiful plant upon a high south wall, but which, being planted out somewhat late, have failed to colour their flowers before the cold weather set in: much, however, to my great surprise, the severe frosts, which have entirely cut down the *Dahlias*, *Marvel of Peru*, &c., have left the *Cobcea Scandens* perfectly uninjured; not even are their finest shoots affected: it, consequently, seems a much hardier plant than I expected. Might it not, by nailing matting over it, be sufficiently protected through the winter? Your opinion on this subject will oblige, — A SUBSCRIBER FROM THE COMMENCEMENT."

[Until the morning of the ninth, all the flowers-beds in Bedfordshire, *Heliotropes*, *Geraniums*, *Dahlias*, &c., were as fine as they were in August. Just as in your case, the *Cobcea*, not against a wall, but along a trellis, is, as yet, uninjured. The frost, however, has not yet been severe. We would advise you to do as you propose, though we will not hold out any great certainties, that after all your labour the plant will get on better than one housed in-doors, in a young state, and turned out in May; or even much superior to a young plant raised in a hotbed in March. Sometimes we have secured an old plant out-of-doors, that by its subsequent vigour and fruitfulness in flowers more than repaid the labour; and when we did succeed, we proceeded in the following manner:—A great part of the head of the plant

was cut off, and all the younger leaves. A cone of ashes was raised about the roots, to keep them dry, and exclude slugs and worms. A little clean wheat-straw was spread over it, hood or umbrella fashion, the upper part of the straw surrounding the stem, or stems, lightly; and the whole was neatly covered with a mat, or a piece of water-proof calico. By the end of March, air will be required every fine day. During the winter, the stems were several times examined, to remove all traces of damp. We have also had the plant very fine by cutting it down within a foot or eighteen inches of the ground, and protecting the roots in a similar way: and we may mention, that the same plan answers well, in general, for *Maurandias* and *Lophospermums* against walls. But even with this great success at times, it will generally happen that a young plant, in a robust state and properly hardened off and planted out in May, will grow and flower quite as well. Were you very anxious, we would almost advise protecting one plant, and taking up the other and potting it, leaving it two yards long.]

POULTRY.

MALAY FOWLS.

"May I ask how it is, that in most of the Poultry prize-lists for this season the poor Malays are excluded? or, what is, perhaps, worse, insulted with the offer of an inferior prize? My experience convinces me they are deserving of more consideration. They get their own living upon a walk where a Dorking or Cochin-China would starve (and this is no slight recommendation in these times of dear food); they do not, perhaps, lay so well as the Cochin-China in the cold winter months; but they will, at any rate, lay better at all times than the *over-praised* Dorking.

"I see, in your number of the 24th ultimo, that you consider it an unsettled point as to what breed of fowls is best suited to the wants of the farmer and cottager. The Malay would, I think, be found more desirable than either Dorking or Game: much hardier than the former, and less pugnacious than the latter. — CATHE. ANTHONY, *The Willows, Herefordshire*."

[As a distinct breed of fowls, the Malays are always found in the prize schedules of our leading poultry Societies, and it is, certainly, an error to exclude them from that position. As to their economical properties, we should not be disposed to rate them so highly as you do; regarding the Shanghai, in that respect, as a more valuable bird. In comparison with Game and Dorkings, again; these last would certainly have the preference, in our estimation, as a table-fowl, both as regards the quality and comparative quantity of meat afforded by them. — W.]

HISTORICAL NOTES ON THE INTRODUCTION OF VARIOUS PLANTS INTO THE AGRICULTURE AND HORTICULTURE OF TUSCANY: a summary of a work entitled *Cenni storici sulla introduzione di varie piante nell'agricoltura ed orticoltura Toscana*. By Dr. Antonio Targioni-Tozzetti. Florence, 1850. — (*From the Horticultural Societies Journal*.)

(Continued from Vol. XII., page 667.)

THE *Finocchio*, so highly prized by the Italians, especially in the southern portion of the peninsula, is comparatively a modern vegetable. It has, however, produced several marked races or permanent varieties, amongst which the principal are the *finocchio forte*, but little removed from the common wild fennel, the *finocchio dolce* or sweet fennel, and the *finocchio di Bologna* or *finocchione*, with the lower part of the stem (or head) much enlarged and succulent. These three varieties are considered by modern Italian botanists as so many distinct species, the two last stated to be of unknown, but probably of "Grecian or Syrian" origin. But Professor Targioni admits that they are not mentioned by any Greek writers, and that the *finocchio di Bologna* was a new vegetable brought to Florence from Bologna in the middle of the sixteenth century. They are surely all cultivated varieties of the common fennel, which is truly wild in most parts of Mediterranean Europe.

Four other Umbellifere are cultivated in Tuscany as

condiments. *Parsley* (*Apium Petroselinum*), a native of Southern Europe as well as other countries, was cultivated for its leaves by the ancient Greeks and Romans, and has maintained its ground with little alteration to the present day. *Aniseed* (*Pimpinella Anisum*), now much grown in Tuscany, appears to have been formerly imported as an article of trade from Crete and Egypt, where it is indigenous. The first mention of its culture in Italy is by Palladius under the Roman empire. *Dillseed* (*Anethum graveolens*) and *Coriander* (*Coriandrum sativum*), natives of Southern and Eastern Europe, are also cultivated in Tuscany for their seeds, but are little appreciated in western Europe. The *Caraway* (*Carum Carvi*), though as common in a wild state in Italy as in other parts of Europe, is not mentioned among Tuscan products.

The *Crucifera*, notwithstanding their importance in culinary and rural economy, are dismissed in a few words, the *Cabbage*, the *Turnip*, the *Rapeseed*, and the *Rudish* being the only ones mentioned. The *Cabbage* (*Brassica oleracea*), which in some Northern countries constitutes a principal item in the food of the peasantry, is almost lost among the variety of culinary vegetables of the more favoured South. It is indigenous to the rocky shores of the Mediterranean and Black Seas, and has been brought into cultivation from the remotest ages. There is, perhaps, no species of vegetable which sports so readily, and of which a greater number of more or less permanent races and varieties have been established in our gardens. For a detailed account of the most important of them, the reader is referred by Targioni to De Candolle's well-known dissertation.

The *Turnip* (*Brassica napus*) is still less appreciated in Italy; indeed the climate appears to be scarcely suitable for its extensive agricultural cultivation, and in southern gardens it turns out a hard, fibrous, strong-tasting root, which we cannot blame them for neglecting. In its wild state it is so widely-spread a weed, that it is impossible to say, from data as yet recorded, what is its original country. The *Rapeseed* or *Colza* (*Brassica rapa*), cultivated for the oil extracted from its seed, is mentioned by Columella and Martial. It is probably of a similar origin, and is indeed by some supposed to be a mere variety of the same species.

Radishes (*Raphanus sativus*) find in the South and East, climates much more genial to their constitution than with us, and the roots acquire a large size, red, white or black (although we have never seen any of those yard-long black radishes mentioned as having been exhibited at Moscow), but the flavour is seldom so mild and delicate as in our gardens. Both the long and the turnip-rooted were known to the ancient Romans, and Professor Targioni, reading in botanical works that *Raphanus sativus* is a native of China, appears somewhat puzzled to imagine in what remote times it could have been imported from thence to Rome. The fact is, there are no more wild succulent-rooted radishes in China than elsewhere, and any one who observes with an unprejudiced eye the varieties of shapes assumed by the pod of the *R. raphanistrum* on the shores of the Mediterranean, can scarcely fail to come to the conclusion, that he sees in that species the wild prototype of our garden radish.

The innumerable varieties of *Cucurbitaceæ* cultivated in Tuscany, are reducible for the most part to five botanical species, the *Gourd* or *Pumpkin* (*Cucurbita Pepo*), the *Bottle-Gourd* (*Cucurbita lagenaria*), the *Water-Melon* (*Cucumis Citrullus*), the *Cucumber* (*Cucumis sativa*), and the *Melon* (*Cucumis Melo*). They are none of them indigenous in Europe, but were all introduced in very early times from Asia or Africa. They all, as well as some other species not known in Europe, have from time immemorial been cultivated all over the warmer parts of Asia, yet some of them are positively stated never to be found there wild. Very little, however, is known on the subject, for sufficient care has not been taken to investigate how far the characteristic forms are due to cultivation, nor to distinguish the real botanical species, so as fairly to compare them with the wild ones. We have no data at present for discussing the question, which can only be satisfactorily resolved when taken up by some intelligent Indian botanist, who will not rest satisfied with the validity of a botanical species till he has traced it to its really wild form.

The first introduction into use of *Alliaceous bulbs* is lost in the remotest ages of antiquity. They were cultivated as

objects of adoration by the ancient Egyptians. The Greeks had many varieties, of which several are recorded by Theophrastus under names derived from the Asiatic towns whence they were introduced, and they were also in common use among the Romans. Of the five species mentioned as now grown in Tuscany, the *Chives* (*Allium Schönoprasum*), a common European plant, already cultivated in the time of Theophrastus, is the only one admitted to be indigenous, but the *Leek* (*Allium porrum*) is evidently a mere variety of of the *Allium ampeloprasum*, which also ranges over a great part of Europe. The *Shallot* (*Allium ascalonicum*) was very early introduced from Syria or Asia Minor, where it is still found wild. The *Onion* (*Allium cepa**) will probably prove identical with the *Allium fistulosum*, a species having a rather extended range in the mountains of South Russia, and whose south-western limits are as yet unascertained. The *Garlic* (*Allium sativum*), including the *Rocombole* (*Allium ophioscorodon*), which is a mere variety, as indicated in several South Mediterranean floras, but in some instances the evidence of its being really wild is far from satisfactory.

The cultivated *Beets* are referred by Italian botanists to two species, of which one only, *Beta cicla*, is admitted to be of native origin, whilst the true *Beta vulgaris* is stated to be indigenous to Central Asia, Egypt, and the shores of the Mediterranean, to the exclusion of Italy. Moquin-Tandon has, however, more correctly reunited the whole under the Linnean name of *Beta vulgaris*, of which he reduces the numerous forms to the three principal races: First, the *Wild Beet*, with a slender, hard root, sparingly introduced into kitchen-gardens for the foliage, occasionally cooked with sorrel to diminish the acidity of the latter. Second, the *White Beet*, *poirée* or *poirée-carde* of the French, with a thicker but still hard root, with enlarged leaves and with a great tendency to succulence in the petioles, which are blanched like cardoons for culinary purposes. This vegetable is frequently mentioned by ancient Greek and Roman writers. Third, the *beet-root*, *barbabetola* of Italian gardens, *betterave* of the French, so well known for its sweet and succulent root, was first introduced into Italy in the sixteenth century, from Germany, where it was probably first produced. A sub-variety of the beet-root, with a somewhat coarser and larger root, now become so important an article in agriculture, was originally put forward under the name of *root of scarcity*, *racine de disette* in French, or *mangel wurzel* in German, which latter translation is now adopted by our farmers, absurdly corrupted into *mangold wurzel*.

Spinage (*Spinacea oleracea*) was unknown to the ancient Greeks and Romans, but appears to have been early used by the Arabs, transferred to their gardens from the plains and lower hills of Western Asia, where it is now found wild. The Moors carried it with them into Spain, from whence it gradually spread, in the middle ages over the rest of Europe. It has now generally replaced the *Orache* (*Atriplex hortensis*), a plant also of Eastern origin, but of much earlier introduction, as it appears to have been known to ancient Greeks under the name of *Atraphaxis*, and to the Romans under that of *Atriplex*.

Asparagus (*A. officinalis*), indigenous to Italy, as well as other parts of Europe, is mentioned both by Cato and Pliny as carefully cultivated, and attaining a considerable thickness in their days, and has ever been a favourite vegetable among the Italians, who grow it to great perfection; they likewise eat the thin, almost thread-like shoots of the wild plant.

Among sweet herbs, *Basil* (*Ocimum basilicum*) has been much grown, as a condiment or for medicinal purposes, in all hot countries, from the very earliest times on record. It is an annual that sows itself so abundantly over the warmer regions of Asia and Africa, that it is impossible to say which may have been its original native country. Numerous varieties are recorded as produced by cultivation, and some other species are grown in India and Africa, but the common *O. basilicum* (which I am now convinced should include the *O. minus*) is the only botanical species known in Italy, where several varieties are great favourites in the cottage windows of the lower orders. *Sweet Marjoram* (*Origanum Majorana*) was introduced from Egypt or Syria, where it is still common

* The supposed principal botanical character, the dilatation and lateral tooth of three of the filaments, is often ill-defined or disappears altogether in our garden onions.

in a wild state. *Tarragon* (*Artemisia dracunculus*), widely spread over South Russia, was brought, probably from the shores of the Black Sea, in more recent times. The first mention on record is by Simon Seth, in the middle of the twelfth century, but it appears to have been scarcely known as a condiment till the sixteenth century.

Among textile plants, *Flax* (*Linum usitatissimum*) was extensively cultivated and used by the ancient Egyptians, and formed a considerable article of trade between them and the Greeks, who, besides weaving its fibres, were acquainted with the medicinal properties of its seeds, which they even mixed with their bread. It was cultivated in Italy by the Etruscan Falisci in the time of Silius Italicus, but was thought little of by the early Romans, who wore chiefly woollen clothing, till the time of the Empire, and even then its cultivation was not much favoured, in the belief that it exhausted the soil. In modern Italy it has been more generally grown, but still rather for local consumption than for exportation.

With regard to the origin of the species there is still considerable doubt. Professor Targioni follows other botanists in considering it as a common European plant; and it certainly is found wild in most countries where it is or has been cultivated; but all the evidence we possess tends to show that (with characters assigned to the species by botanists) it is everywhere rather escaped from cultivation than really wild. Planchon, the last monographist of the genus, divides it into two species, neither of them known in their original indigenous stations. The species nearest allied, *L. angustifolium*, is indeed a common European one; but, amongst other characters, the differences in the size and colour of the petals, generally constant among *Linums*, prevent our pronouncing for their identity without further evidence.

Hemp (*Cannabis sativa*) is of East Indian origin. It is common in the hills and mountains of Northern India, and was very early cultivated throughout the East, though more for its intoxicating properties than for the fibre. Herodotus mentions it as grown by the Scythians, Dioscorides alludes to the strength of the ropes made from its fibre, and Galen to its medicinal properties. It was introduced into Italy by the Romans, apparently under the Empire, and much later than flax. It is now an object of extensive culture in the plains of Lombardy, and in the Romagna.

Cotton (*Gossypium*) was imported from India by the ancient Egyptians, by the Greeks, and by the Romans, but appears never to have been cultivated in Europe till the Moors introduced it into Spain towards the twelfth century, although some assert that it was already grown in Sicily in the eleventh century. From Spain it was carried to Southern Italy, where there was much of it in the time of Porta, who died in 1515. Its culture is still kept up in Calabria and about Naples, and under Napoleon's continental regime it was in some measure profitable, but is now of no importance. In Tuscany it has been repeatedly tried, but as often abandoned, the crop being in that climate far too uncertain to afford any chances of profit.

Among tinctorial plants, *Woad* (*Isatis tinctoria*), much cultivated in early days for its blue dye, has now been generally replaced by the importation of indigo, excepting some partial use as a foundation for the darker colours. It was well known to the ancients, for its use for dyeing wool is spoken of as habitual by Dioscorides, Vitruvius, Pliny, and Galen; and the ancient Britons, according to Cæsar, and the Dacians and Sarmatians, according to Pomponius Mela and Pliny, were in the habit of colouring their bodies with it. Ancient authors distinguished the wild and the cultivated woad, but the former was probably some very different plant, and they, perhaps, only knew the real one in a state of cultivation. It was certainly grown in Spain before the twelfth century, and extensively so in Tuscany during the flourishing times of the wool trade, in the thirteenth and fourteenth centuries, and up to the sixteenth. After that, however, it gradually diminished, as indigo came to be imported from America. To stop this decay, protective regulations prohibiting the importation of indigo were enacted in the Roman states in 1652, but they had but little success in the encouragement of the woad-growers; even Napoleon's continental system gave them but a short temporary stimulus, and they have now quite disappeared from central Italy.

As a wild plant the woad has an extensive range over Europe and the temperate parts of Asia, but in the former continent it is probably only really indigenous in the southern and eastern districts. In England, at least, it is only to be found wild where it has escaped from cultivation.

Madder (*Rubia tinctoria*), furnishing the well-known beautiful scarlet dye, is another among the earliest cultivated for tinctorial purposes. Two sorts were known in the days of Dioscorides, and are still distinguished by botanists, but whether they be really species or races which have acquired a degree of permanency by long cultivation remains to be ascertained. The one, the cultivated *Rubia tinctoria*, with a thick, succulent, intensely-coloured root, and annual stems and leaves, is said to be of Eastern origin, and is only found in Europe where escaped from cultivation; the other, the *Rubia peregrina*, is common in a wild state in the south of Europe. Its leaves and stems are of longer duration, and the root is much smaller and paler coloured, but is occasionally collected for the dyer even in the present day. In Tuscany, the cultivation of the more valuable *R. tinctoria* has been frequently attempted, but generally abandoned as not sufficiently profitable, owing either to unfavourable local circumstances, or to bad management, the dyer importing it from the Levant at a very low rate. The Marquis Cosimo Ridolfi, however, whose name is so frequently mentioned in these pages in connection with the improvement and extension of the agriculture of his country, appears recently to have met with better success in the establishment of the growth of madder in the neighbourhood of Spoleto.

(To be continued.)

TO CORRESPONDENTS.

THE COTTAGE GARDENERS' DICTIONARY.—The following unasked-for testimony comes from an amateur of a character that renders it doubly gratifying and valuable:—"Seeing that a correspondent, 'Mary,' enquires about the price of '*The Cottage Gardeners' Dictionary*,' reminds me that I owe such a debt of gratitude to that admirable book, for its lucid, and simple, and yet most comprehensive instructions, that I should be most ungrateful were I not to bear this public testimony to its value.

"My knowledge of gardening, until I procured the work, was, indeed, but a 'smattering,' and I now think, without much vanity, I may say, that I am as well up in horticultural knowledge as nine out of ten amateurs, although I have not a great deal of time to give up to horticultural pursuits.—**THE COTTAGE GARDENER'S FRIEND.**"

FRIGI DOMO. (*M. S.*)—We did not know that the maker had moved. Perhaps he will advertise where orders may be now sent. You can only obtain cuttings of *Chrysanthemums* from private friends.

HARES AND RABBITS (*W. Thompson*).—We do not think that a band of *gas-tar* applied round the stems of the trees, as you propose, would do them any injury. Do not paint the stems with it any higher than is absolutely necessary.

NAMES OF PLANTS (*G. Grey*).—Yours is the *Pinus strobus*, or Weymouth Pine. Sent by post, "*The Gardeners' Almanack*" would be eightpence. (*A Subscriber*).—Pines, and all other coniferous plants, are very difficult to discriminate by bits of branches without their seed-cones. Of yours, 5. is *Juniperus saccica*. 6. *Pinus*, species uncertain. 7. *Photinia arbutifolia*. 8. *Photinia serrulata*. 9. *Cupressus*, uncertain which. (*F. F. W. Malvern Wells*). Your Fern is *Platytoma rotundifolia*. It was introduced in 1824, and requires a greenhouse. *Tyrol's* puzzling bits of coniferous plants are two small for any one to be certain about them; but we believe the following to be correct:—1. *Thuja occidentalis*. 2. *Thuja orientalis*. 3. *Juniperus virginiana*. 4. *Cupressus sempervirens*. 5. Uncertain. 6. *Juniperus prostrata*. 7. *Juniperus communis*, or variety. 8. *Juniperus sabina*. 9. *Alonsoa linearis*.

NAMES OF APPLES (*M. M. Weald of Kent*).—No. 2. *Lewis' Incomparable*. 3. *Pitmaston Russet Nonpareil*. 4. *Knobbed Russet*. 5. Also *Knobbed Russet*. There was no No. 1.

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Advertisements.

In December will be Published,

THE

POULTRY-KEEPER'S POCKET ALMANACK

AND

DIARY OF PROCEEDINGS IN THE POULTRY-YARD.

Besides the usual contents of an Almanack, it will contain a ruled Diary for recording all that goes on in the Poultry-yard, and much useful information concerning Fowls; by well-known contributors to **THE COTTAGE GARDENER**.

WEEKLY CALENDAR.

D M	D W	NOV. 28—DEC. 4, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
28	Tu	Song Thrush again sings.	30.291—30.126	45—37	S.	—	41 a 7	55 a 3	0 1	8	11 52	332
29	W	Common Flat-body Moth.	30.086—29.980	50—39	S.	05	43	54	1 22	9	11 31	333
30	Th	St. ANDREW.	30.058—30.025	52—47	S.E.	01	44	53	2 40	10	11 9	334
1	F	December Moth.	30.096—29.971	48—24	S.E.	—	46	52	3m 57	11	10 47	335
2	S	Winter Tortrix Moth.	29.937—29.899	42—21	—	—	47	52	5 14	12	10 24	336
3	SUN	ADVENT SUNDAY.	29.959—29.951	41—36	E.	02	49	51	6 31	13	10 1	337
4	M	Carabus morbillosus.	29.964—29.904	43—35	E.	—	50	51	rises.	☺	9 37	338

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 48°, and 36°, respectively. The greatest heat, 60°, occurred on the 28th, in 1828; and the lowest cold, 16°, on the 29th, in 1846. During the period 99 days were fine, and on 90 rain fell.

MY AUTOBIOGRAPHY.

WHEN a man is requested to write the history of his life and pedigree at his leisure, as in the present instance, it must be his own fault if he is not well chronicled. Some men, it is true, would rather dwell on the weaker points of their character under such circumstances; but we have, all of us, our shades and shadows on the wrong side of the line; and if a man is not well spoken of by himself, he runs the risk of being set down lower in the scale of merit than he ought to be.

The best point among my qualities is a good memory. I am more indebted for my success in life to my retentive memory, than to all other helps put together. I could now rehearse almost every instance of life since I was nine months old, if that were of any use. I was not intended for the garden by any of my relations or friends. I only took to it from necessity, and under very unfavourable circumstances. According to the genealogy of my family, I am the representative of the twenty-third generation of a race of valiant men,—not one of whom had ever put a pen on paper, except, perhaps, to make his cross on his wedding-day. At five years of age I learned the first letter of the alphabet; at twelve, I could read every word in the English version of the Bible, as well as I can to-day; but, long after that, I did not know the meaning of a single syllable of the English language, or of the Scotch language either. At fourteen, I was looked upon as a prodigy by some relatives, because I could count how many Barley-corns would reach round the world. When I was sixteen, I could translate a passage from Ovid or Virgil into English, or a sentence of English into their tongue; but, at that time, I did not know the meaning of but ten or twelve words of the English language. The Whipeord Cactus (*C. flagelliformis*) was the first name of a plant I learned,—I mistook one of the shoots for a rat's tail, when I was about seventeen years of age; and I was full twenty before I took a tool in hand to do a regular day's work; and the first six days I shall remember as long as I live; for I could hardly dress myself for the pains and penalties of earning bread by the sweat of my brow. I was nine years a journeyman, and twenty-one years head-gardener. I was married twice; but having no children to provide for, and not having learned any expensive habits, I was enabled to retire from service at fifty years of age, on an allowance sufficient for all my wants, but not enough to allow me to indulge in hazardous speculations, or foolish experi-

ments. I might have settled down farther from London, and lived cheaper, but then I should forego the pleasure of meeting with old friends and associates so easily; and, above all, I should lose the pleasure of seeing new plants, of hearing about all new projects in gardening, as they appear; and thus, of feeding the ruling passion in my old-age.

I was born on the 8th of March, 1802, about sixteen miles from the then parish church of Urray, in Strathconon, Rosshire; but soon after that my father removed to the neighbourhood of Inverness, where he joined in partnership with one of the largest cattle dealers and breeders in the country—Hugh McLean, Esq., of Craigscone. My father was acting manager, but Mae kept the purse strings; they rented large tracts of grazing lands round Beaufort Castle, under the late Lord Lovat, together with a few square miles of summer pasture, farther up among the hills, a place called Corycharbie, then celebrated for its free-trade in highland sports, including deer-stalking, shooting grouse, and fly-fishing, without certificates; a bad place for young Norvals, and for conjugating verbs, active or passive. Thither my father removed from the "Lowlands" every season, in May, with his family, herds, flocks, and *ghreighs* (droves of young horses), and returned with them to Beaufort Castle, at the beginning of October, just as we now do with bedding-plants. In this land of Goshen, I might be some twenty miles from the parish school—every parish in Scotland has an endowed school—but still I learned some useful things, if I forgot my lessons; I learned to knit and darn stockings; to make and mend shoes, and coarans, a kind of sandal made of untanned hides; to tan leather, and dye worsted yarn with lichens; to roast or boil potatoes; to make oat-cakes and porridge; to milk cows and goats, feed calves and kids, strain milk and cream, make butter and cheese; and "kill and dress" any animal fit for the shambles. I also learned to make fishing-lines and rods; dress fly-hooks for different seasons, lochs, burns, and rivers; and for my proficiency in this branch, I often went without my dinner, and there was no "tea" in those days. I learned to load and unload guns and rifles, and clean them; to shoot grouse and to stalk deer, more after the way taught by Mr. St. John, in his "Highland Sports," than that practised by the Prince Consort when he was at Blair Athol; though I believe his deer-stalking has been sportsman-like since he has been fiefed a Scotch laird; but I never poached; the late Lord Lovat allowed



J. Old. Kent
D. Beaton

all who rented his lands to shoot over them ; and when the present Lord came into possession, I became one of his Lordship's deputy gamokeepers, and assisted to harry out eagle's nests, trap badgers, foxes, and wild cats ; also to " break " dogs, and exercise them ten days or a fortnight before the 12th of August, the first day of grouse-shooting. I have eaten salt with his Lordship for six or seven " seasons ; " studied under his man-cook, Luke Lucas, a regular Yorkshireman ; and was taught to

wash, starch, and iron, shooting neckerchiefs and jackets, by his Swiss valet, Calo. All of us had the best master in the world, who was then the best shot of the day. He has never forgotten one of his greatest admirers ; and although red-deer, dogs, and horses, are not the best gardeners, his Lordship declares, to this very day, that he has reared one of the best gardeners in England.

Speaking of horses, reminds me that I was once a Nimrod ; that I learned horsemanship by first practising

on a bull calf, which used to share my meals whenever I could slip out unobserved; but he turned ungrateful at last. One hot day, in July, as I was driving a herd of cattle down a brae, a red cow was bit by "the fly," and ran for it, arching her tail, and kicking her clumsy heels in the air; this is an infectious game; another and another started off, till all were in the mood; last of all, my-sleek Arab "threw out" with such a glee, that I could hold on no longer; but I could not make out the exact distance he threw me, as I was badly stunned. He never, afterwards, objected to my mounting him; but he soon got tired, and knew how to dispose of me.

About this time I began to learn history; and the first things which I can recollect were the exploits of the 42nd Highlanders, at the battle of Talavera, and General Wellesley, the great Duke; who, if I am not out in my books, occupied such advantage in position, as Menschikoff did at the Alma; but with a far different result; for *we* drove them down the hill again and again with such effect, that they did not try it on again for months to come; and so on down to Waterloo. The accounts of cavalry charges, however, were the only parts of the war which I could never get out of my little head; my young blood was up to "fever heat;" I had my "allies" too, and we all made up our minds to have horses, and be *sogers*. There was no want of cavalry, when the colts were sent up "to grass;" but that stupid bull cowed me much, and the idea of being upset by a fiery colt, in the face of all my own officers, perplexed me sadly. It was three or four years before I could handle my horse so as to lead a cavalry charge. Meantime, a pensioner was a god-send to our house; they all liked "a drop," and to tell of the war, and before I could stick to the ribs of a colt, I learned all the duties of a commander; and having been at school, every winter, for a long while, the post was always assigned to me by common consent. The perfection of a cavalry charge, in those days, was, when the enemy was on the opposite side of a river, then you draw up a-breast, twenty yards on this side the river, opposite a bank where the water is deep enough to swim in; now draw swords, dash on to the bank, plunge into the river, keep your horse's head well up in hand, square your elbows to keep down the kilt, and no matter how deep the passage, you are out on the other side, safe as ducks; now give him your heels, the shower from his dripping sides will confound the enemy, whose flank is now turned, and those that are not ent down are easily driven, back foremost, into the river; no enemy can swim, and the day is yours; but do not go home till your clothes are dry, do not let your sisters see these charges, and you may save your country for years, nobody knowing how. All our aunts, and most of our grandmothers, were the only relatives who could appreciate the necessity for highland troopers, and the dash and daring of the self-elected officers.

My mother died before my ardour for the military service attracted attention, and my father did not marry a second time; he was forty years a widower, and he might be said to live, only to carry out her last wishes. She was a pious, good woman, full of charity

and good works, and before I was born she resolved, that if her second child was a boy, he should be brought up and educated for the church. For this end she, herself, began to lay the foundation as soon as I could lisp, and on to my seventh year, when she died. My father was now doubly anxious that my education should continue on the same foundation; and the person whom he engaged to manage the household affairs was selected for her qualifications in that respect. She soon obtained a strong influence over me and the rest of the children—there were five of us—through her kindness; she was much opposed to my *favourite* study, and my strong desire to be a cavalry officer some day; and it was some years before my father knew of it. Meantime, my grandmother filled my head with the genealogy of the Beaton. The Jewish custom of counting only the first born son, in chronological order, was closely followed in the highlands from the days of Ossian and St. Patrick, or during more than fourteen hundred years; this found me the twenty-third "first-born" of a race which sprang from a defeated brother, but whether a first or a second brother was not quite certain. By the last defeat my ancestor lost the Isle of Sky. The two brothers had agreed to row in open boats from the mainland, with each a certain number of followers, and the first who should reach the island was to be the owner. My line failed, and lost the prize; but worse even than that, the fact is held out to all the world to this very day, in the arms of Lord MacDonald, the lineal descendant of the other brother, "*Per Mare per Terra*," which, when rightly understood, means "I have done them at last, by sea and by land." The disgrace on our side was complete; we returned in the boat, the Gaelic for which is *bhate* or *bhutean*; turn it into the vulgar tongue, and it makes Beaton. Your humble servant is the last, and likely enough to be the last, of that long run of boatmen; but another turn of the die, and he would have been a lord, *per mare per terra*.

Now, when a little fellow's grandmother fills his stomach with curds and cream, his head with such stories as the above, and allows him his choice of a dozen young horses, in troublesome, or warlike times, how could he help going mad to be a soldier? From 1812 to 1817, I studied as hard as ever I could for the two professions,—the Kirk and the Camp. The fall of Napoleon in 1815, and the hard harvest in 1816, to say nothing of the losses during the hard winter of 1814, caused a panic among cattle-dealers, and more than one-half of them were bankrupts. My hopes of prosecuting my studies were now wholly blighted, and I left school, and went tutor into the family of Mr. Strachen, Lord Lovat's manager, at Beaufort Castle, where I taught two boys and two girls for more than two years. Here I got the first hold of the English language, no Gaelic was spoken in the house; I was treated more like a son than a teacher. Thomas, the oldest son, was now fit to go to the Inverness Academy, preparatory for college, and Mr. Strachen proposed that I should go with him, both to look after Tom, and prepare myself to compete for a bursary in King's College, Aberdeen. Inverness Academy

was then the best school in Scotland, and still is among the very best in the three kingdoms. Many of our naval officers had to get the finishing stroke at Inverness, after going through at Oxford, or Cambridge. My fees here for the quarter were only 5s., and 2s. 6d. for entry in the books of the Institution. Twenty-five guineas a quarter would hardly school me so well now in England. I was examined, to see which class I was fit for; and through my bad English, I made such a blunder as got me a *nick* name for a long time. The master of the second Latin class examined my pupil and myself together; he told the head-master, the Rev.—Fraser, who officiated then in the parish church of Dorres, that I was fit for the first class. In my broken English and confusion, I told the head-master that I was fit for *any* class, and he called me a second Orichton: by this nickname I passed two sessions at the Inverness Academy, and contested for the head of the first Latin class, against two brothers of the name of Denoon, and another by the name of Kinloch; we were the best out of seventeen. Yet, to my mortification, I soon found that I could not be a “dux” at the examination, and, without that, I had no hopes of a bursary in Aberdeen. The first, second, and third places in the class were marked once a week; but I might be first five days, and yet have only the third place on the sixth; by some fatality the class was never “taken” when I was first; but partiality had more to do with it; I ought to be first three times out of four, and that would tell in my favour at the examination for a “dux,” or first fiddle in the class. Kinloch thought also that justice was not always blind in his own case, and, “to cut the governor,” he advised me not to stand the examination, and even put a quotation from Milton into my mouth as a reason. “Governors” like to bring up their best scholars to be examined once a year; but they lost two of them that year; and when I had been hard pressed to give the reason why I would not come to the examination, Milton asked, “who and what art thou, you inexorable creature, who dared (est) to thwart my way to yonder gate,” pointing to the head of the class; and off I started, wishing I had never seen a book.

Here was a pretty mess,—a stuck person, a stuck officer, and a stuck-up gentleman, with plenty of friends, but no money. The present Lord Glenelg was then plain Mr. Charles Grant, M.P. for Inverness; and some of his strong adherents got a promise from him that he “would keep the youth in mind.” To keep the mind and body together, meantime, the “youth” went into Lord Lovat’s garden to work “till something cast up.” His lordship was so kind as to order that I should receive full wages at once, whether I could work or not; and, knowing my inclination for sport, I was to be given out to the game-keepers whenever they asked for me, and I was never absent from the muster-roll on the 12th of August for the next few years. When the last snipe of the season was bagged, I went back into the garden; but I could get out on the least pretence about shooting. The “tutor,” as I was now called, was an eye-sore to the Beaufort gardeners, who had to rise from apprentice-

ships; and they took care I should see as little of gardening as they could the first season. This soon wore off, for I expected every day to be made a gentleman, and I could afford to humour them; but it takes a long time to make a gentleman—so long, indeed, that I began to think seriously of being a gardener instead, when I “came of age.”

I was now “brothered”—an awful ceremony, by which a young fellow is admitted into the free-masonry of gardening; after that, every one assisted me to make up for lost time: all their books were open to me, the news spread, and I was admitted to see other gardens and systems round about.

Mr. Niven, lately of the Glasnevin garden, near Dublin, was then in his first place, Bealadrum, not far from Beaufort Castle. He came from Bothwell Castle, and was accounted the best gardener beyond the Grampians. He had the best hothouses in those parts, and the best collection of house-plants. He was very kind, and would tell anything about plants and gardening. I often went to see him. He was the first gardener who fruited Vines in pots, and I saw them in 1823 or 1824. I think he wrote a paper on the subject in the “Memoirs of the Caledonian Horticultural Society.” Charcoal was then just introduced into the north, from English gardening; so that pot-Vines and charcoal are not such new discoveries as one might think.

I was now complete master of the Linnean system of Botany, as I thought. I could tell the class and order of any fresh flower, and I could run over a wonderful quantity of hard words and names. I knew the name and class of almost every plant in that part of the country. This was only pastime, compared with school-difficulties, and with learning to speak English.

A clever young man, from Beaufort, obtained a foreman’s place in the garden of Sir Wm. Cumming Gordon, of Altyre, near Forres, who wrote to me to say, that if I really wished to follow out gardening, he could get me in there, one of the best gardens in Scotland. I jumped at the offer, first cancelling all the applications for making a gentleman of me. The collection of plants there was immenso, and I was at the head of them in less than a twelvemonth. I had access to all the books and periodicals on gardening. Sweet was then the best practical author, and he was conducting several works at the time. Here I first began crossing bedding plants and bulbs—three favourite pursuits with Lady Cumming, who, after many years, sent seeds of her crossed Rhododendrons to Shrubland Park, at my instance. The great African lion-killer, Sir William’s second son, was then learning his lessons in books and horsemanship; he was the handsomest boy in all Scotland, and so fond of fun and dancing, that we could have a ball and supper any night in the year, through his influence with mamma. There was a troop of young men in the garden, and plenty of maids in the house, and we often had “the company” from the dining-room to see us dancing. Sir William was the handsomest man in the north, and so proud of his boys, that he seldom left us without dancing a reel or two himself.

Jamie Sinclair, the garden-boy, and a natural genius, played the violin. Lady Cumming had this boy educated by the family tutor, sent him to London, where he was well known in 1836-7-8 for his skill in drawing and colouring. Mr. Knight, of the Exotic Nursery, for whom he used to draw orchids and new plants, sent him to the Crimea, to Prince Woronzoff, where he practised for thirteen years. He laid out those beautiful gardens which the Allies so much admired the other day; had a thousand acres of vineyards belonging to the Prince; was well known to the Czar, who often consulted him about improvements, and who gave him a "medal of merit," and a diploma, or kind of passport, by which he was free to pass from one end of the empire to the other, and also through Austria and Prussia. I have seen these instruments. He returned to London in 1851, and was just engaged with a London publisher for a three year's job, when Menschikoff found the Turks too hot for him last April twelvemonth; the Russians then made up for blows, and Mr. Sinclair was more dangerous for them in London than Lord Aberdeen. He was the only foreigner who was ever allowed to see all that was done in and about Sebastopol, and over all the Crimea; the Czar, however took care that Sinclair could not join the "Allies;" but where he is, and what he is about, I must not tell until the war is over; except that he is not in Russia, and that he will never play first fiddle again in Morayshire, from which I removed to Perth, after a regular parting ball.

Perth was then the gayest place in Her Majesty's dominions; the best neighbourhood in Scotland for good gardening; and the finest place for scenery I ever saw; and there, in the best conducted nursery I know, that of the Messrs. Dickson and Turnbull, I worked nearly two years, whence I went to Edinburgh, to the garden of the Caledonian Horticultural Society. Two years after that I saw Burke the murderer, missed daft Jamie from the streets, saw the row at Dr. Knox's, a better row at the college, and then sailed for London, and was thirteen days on the passage.

The sight of London disappointed me much. For a long time I could see nothing better than the Cowgate in Edinburgh; at all events, not better than the Cannongate; and when I got to Buckingham Palace, I thanked my stars that I missed being a soldier to defend such a rookery; but things are altered since those days. I seldom missed an opportunity of picking up all I could about gardening, from Beaufort Castle to Buckingham Palace, and I had a fair idea of all gardening, including a light purse. I got into the Clapton Nursery, then held by Mr. John Mackay, and Mr. Low was foreman. Six weeks after landing, I was sent into Herefordshire, to Hatfield, near Ledbury.

When parting with Mr. Mackay, he gave me excellent advice, saying that every family had a tune of their own, and that all servants who wished a quiet life, and to rise in the world, ought to learn to whistle the particular tune of the family they lived with. "Gardening, and all that sort of thing, is easy enough, *if you study to please*;" and I can now vouch for the saying.

Mr. Gordon, my employer at Hatfield, was a practical botanist, a great lover of experiments, and a most kind and liberal master; through his influence, and at his cost, I got into correspondence with the principal botanic gardens in this country, and with the best private gardens. I travelled every summer to see what was going on round London, and all over the country. I travelled three thousand miles, in England alone, in 1832; saw 200,000 people at one reform meeting in Yorkshire; found Mr. Marnock pulling down the large conservatory at Briton Hall; saw all the *Crinum*s at Wentworth House; the number of pot plants at Chatsworth, about a dozen or so, barring the Pine-Apples; the best Orangery in England, near Prescot; the first *Petunia* that flowered in England, at Lower Boughton, near Manchester; the celebrated rock garden of Lady Boughton, near Chester; the first of the *Calceolarias* in the Epsom Nursery; the Geranium houses of Sir Richard Hoar, near Bath; a waggon load of dried bulbs, and the Pinetum, at Dropmore; the Pine-Apples growing on dry shelves at Downton Castle, &c., all in one season. I fruited and proved forty-six sorts of Grapes, from all parts of Europe, in a house for the purpose; planted beds of stove plants in the shrubbery; proved the old Camellias to be hardier than the Portugal Laurel; crossed all sorts of plants; and had more than an acre of cross seedlings, one year; for Mr. Gregory, nurseryman, Cirencester, measured the ground; collected all the pinuses and bulbs, that could be bought or exchanged, and in 1836, that was the best collection in the west of England. But alas! how vain are all our gatherings in this way. Mr. Gordon was cut off at the age of forty-one, and the whole had to be dispersed; but I had to remain for nearly twelve-months, to see everything finished on a different scale for the widow, as I had the management of the estate as well as the garden.

After that I went to Scotland, to see the farming of the Lothians, on the Carse of Gowrie, and all the way round the coast to Inverness and Beaulieu, and at the latter place I found the best kept farm, and the best crops, I had seen in Scotland.

On my return to London, I engaged with Thomas Harris, Esq., who was beginning that celebrated collection which was dispersed, three years afterward, under the hammer of Mr. Stevens; the first collection of plants he ever sold. After this sale, I engaged with Sir W. F. F. Middleton, Bart, Shrubland Park. My doings there are known to gardening readers from my own writings in *The Gardeners' Chronicle* and in *The Cottage Gardener*; and all that remains for me to close this sketch is, to express my warmest gratitude for the great kindness I experienced from Sir William and Lady Middleton while in their service, and for not neglecting me in my retirement.

To Lady Middleton's and Sir William's good taste I owe my success in flower-gardening, and I shall never forget their kindness; they loaded me with favours when I left Shrubland Park, and ever since, I am presented with the first-fruits of Sir William's gun at the shooting-season. If I have met with disappoint-

ments at my first starting in life, I think, on the whole, that was best for me, and I have great reasons to be thankful.

D. BEATON.

HOWEVER at variance the principles on which the present desideratum of one uniform standard of the points of merit in Poultry may be thought attainable, no one contests its necessity, either as regards the public, the exhibitor, or the judge.

The opinion of a single individual, indeed, is open to objection as being devoid of sufficient authority for such a compilation; but unless acquiescence or discussion be thus invited, the collective epitome of judicial knowledge must, we fear, be long wanting. But here it should be premised, that the points to be now recommended for the poultry breeder's observance, are by no means grounded on any such individual estimate; but, on the contrary, have the concurrence of much that has been ably expressed verbally, and otherwise, by many of those whose opinions would carry much weight with all to whom poultry has become an object of interest.

The difficulties of the task have not been underrated, and it has only been taken in hand from an impression, that, by such a course alone, would be elicited the criticism and discussion requisite for eventual agreement. No one, in fact, can be more persuaded than ourselves that even the most experienced in poultry matters have much yet to learn, and on this ground we would ask for the co-operation of those who may take objection to portions of our suggested code.

It is evident that the most perfect development of the several characteristic features of the different breeds supplies the model by which the breeder's skill must be tested. The term, "different breeds," is here designedly employed; for, whatever the primitive state of the domestic fowl, a sufficient line of demarcation is now visible to justify speaking of many of its varieties as specifically distinct. Here, as elsewhere in the animal kingdom, the efforts at the production of more valuable properties, or more striking characteristics, are ever bounded by a natural check. Improvement goes on, in skilful hands, precisely so far as nature has already pointed out the way, and any attempt to combine what she has separated is followed by inevitable disappointment. Those who lean to the idea of "*originated*" varieties of fowls thus rendered permanent by reproduction, *inter se*, may profitably study this limitation to their efforts. Cross-bred fowls, in the first generation, may very possibly, in some instances, be better suited to the peculiar wants and circumstances of their owner; but their merits and their forms are equally evanescent if left to their own resources for the perpetuation of their race.

The Poultry Exhibition, therefore, which regards the perpetuation of those that may now be termed "pure" breeds, wisely dispenses with the presence of these mongrels.

Among a yard of any one variety of fowls, we are

readily enabled to select various merits possessed by different birds, and these we endeavour to combine in a single specimen, according to the sexes. We thus, in fact, possess a model, although, in some particulars, differences may exist as to the precise proportion and combination of these meritorious features, which is likely to give the most effective result. Hence, the object of a general standard, which shall fix and determine opinions yet at variance, but which make no pretence to devise arbitrary forms, features, or characteristics, beyond those which nature has already held out for our guidance.

The distinctive peculiarities of each breed, or variety, are of paramount importance. Thus, however meritorious in other respects, a Spanish fowl with a bad face, a Dorking without the fifth toe, a Poland with an inferior top-knot, or a Shanghae without quality of fluff, must, one and all, be summarily discarded. The Poultry Judge, it is true, has to regard plumage and form as two most material elements by which his decisions will be guided; but, at the same time, experience has fully shown that the required figure, in all but fancy breeds, is that best suited to economical purposes; and that beauty of feather is every way compatible with all the purposes required of the fowl, viewed merely as to its useful properties.

When the points severally to be aimed at and avoided in the different races have received our attention, we propose to offer some remarks as to the system by which the general standard, that we hope may be arrived at, shall render its arbitrations most intelligible to the public. For, unless a something of this kind be accomplished, so that a spectator before a prize pen may be at once enabled to recognise the points on which success has been achieved, the desideratum that has been alluded to will be but half attained. A majority of exhibitors, we admit, are sufficiently well-informed to gather this knowledge for themselves; but there are many others to whom the ability to do so is wanting; and still more, whom we would desire to instruct and direct to Poultry-keeping, by simple explanations suitable to every understanding.

Commencing with the larger fowls, their alphabetical arrangement places THE COLOURED DORKINGS first on our list.

Grey, including Spangled.

Speckled.

Red.

Cuckoo.

The colour of the Dorking fowl must have a wide range, and might almost be termed immaterial, provided a coarse, mealy appearance be avoided, and the pen is well-matched.

In the *Grey* birds, the cocks are either black or speckle-breasted, with the hackle and saddle varying from white to a deep straw-colour; back, wing coverts and primaries, the same, intermixed with darker shades. The hens of the deeper-toned grey are best placed with the darker-hackled male birds; while the light ash-brown, the slate-coloured, and the silver hens are fit companions for the

others. The "Spangled" cock has hackle and saddle tipped with dark brown or black; the back and lesser wing coverts, rich maroon; with the greater wing coverts forming a blue band, as in the Duckwinged Game fowl. This speculum appears to advantage in the Grey cocks also.

The *Speckled* cocks should have a black and white mottled breast, the hackle, back, and saddle, red intermixed with white—the former colour prevailing. The hens to be deep chocolate, or brown speckled with white. A perfectly black tail has the best effect in both this and the grey variety; but the presence of white should not be regarded as prejudicial.

The *Red* cock should be a perfect black-breasted red bird, with hens of a dark brown spotted with black. Here white is nowhere admissible.

The *Cuckoo* birds, both male and female, to be barred throughout with a dull bluish-grey on a lighter ground of the same hue, similar to the breast of the bird whence the name has originated.

General Characteristics of Excellence.—Great compactness, with great depth and length of the body, which is low on the leg; head to be free from coarseness; comb, whether rose, single, or cupped, to be perfect of its kind, and uniform in the pen; legs white, with a pale pink hue between the scales, the fifth toe being well developed apart from the others.

In respect of size, great improvement having been lately manifested in this particular, and forming, most justly, an important property in this breed, less than eight pounds in the adult male, and seven in the female bird, should not be deemed worthy of a first prize; and chicken of eight months old should be little short of this. These weights are constantly greatly exceeded, and bulk must be always a material object with the Dorking breeder.

Great latitude, we have observed, must be accorded, in respect of plumage of the coloured Dorking; so generally, indeed, is this admitted, that the assertion, "*You cannot breed Dorkings true to colour,*" has almost acquired proverbial authority. On this account, we have avoided many minutiae which, in "birds of feather," must have received far more careful notice.

The *White Dorking* plumage, uniform white; though, in the older birds, the hackle and saddle may attain a light golden tint. Form and size, reduced proportions of the coloured Dorking; a rose-comb in preference to the single, or cupped form. Bill and legs light and clear, without discolouration of any kind.—W.

WE are glad to find that the *Kendal Poultry Society*, whose Meeting is fixed for the 21st, and two following days of December next, have adopted the classes for "single male birds." In no other way could the main object of these institutions, as well as the purpose of individual breeders, be so well served. If, indeed, the birds hitherto exhibited in this department have fallen somewhat short of expectation, it should be remembered,

that in comparatively few instances is there any great superabundance of male birds at this season of the year; and as the formation of a good pen in the ordinary classes will not be risked, it was likely to happen that specimens of secondary merit would appear in the newly-added division. The general adoption of this practice, however, will obviate, another year, this difficulty; and exhibitors will gladly prepare themselves for competition when so desirable an object is to be attained, and so ready a medium provided for the sale of their own surplus stock.

In the prize schedule, we have to regret the error, as we must term it, of arranging the Hamburgs according to their colour, and not their markings; as also the omission of a fourth Poland class, which is so commonly productive of meritorious specimens. In other respects, the classification is good; and we would especially recommend, for imitation, the restriction of the occupants of the Geese and Turkey pens to two specimens of either kind. Not merely is expense in conveyance thus saved; but the birds themselves, usually crowded in their abodes, are much more comfortably circumstanced, and appear, consequently, to much greater advantage.

The sixth rule is as follows:—"Should any doubt arise as to the age of any fowl exhibited, the judges will be empowered, if they consider it necessary to do so, to call in some competent person to their assistance; and, if perfectly satisfied that the age has been incorrectly stated on the certificate of entry, to disqualify such fowl." It may, possibly, be thought, that the judges would possess this power themselves by virtue of their office; but the caution is well given, and the sentence may very likely come with greater weight when thus carefully pronounced.

By the eleventh rule, it would seem that sales may be effected without the intervention of the officials. If this be the case, we should differ from those who would advocate any such private transactions. The sale of all Poultry, at Exhibitions, should be strictly confined to the purchaser and the persons appointed by the Society to conduct these details. The inconveniences of rendering the Exhibition-room a mere mart, or bazaar, are manifest; and confidence, moreover, may be often withheld from the *bona fide* character of such transactions.

The entries, we should observe, close on Saturday, the 9th of December.

PRUNING THE PEAR.

WITH this I may, for the present, conclude winter-pruning. But the subject may be said to be almost, for the present, exhausted; so much identity prevails as to pruning amongst our principal fruits. The Pear, however, both requires and deserves more appliances this way than many of our fruits; especially our more tender Pears, which require every assistance we can render them, especially in what are called growing seasons. As to Pears on the Quince stock, which have been root-pruned, there is little occasion to branch-prune them,—their misfortune is to produce so little wood as to prove, at times, seriously unprofitable.

These remarks must, however, be taken with some qualification, as they do not by any means apply to all; and I should be extremely sorry to cast a prejudice on this stock, seeing it is so useful in many cases,—I merely desire to check, in a genteel way, those who have “ridden their hobby too hard.”

I must here observe, that the suggestions now about to be offered will have for their basis the tying-down principle, which I must recommend as strenuously as ever, especially for Pears. The habit of growth, of not only different kinds, but of the same kind under different circumstances, is so great, that it is not easy to lay down definite rules; and, indeed, it would not be well to tie the hands of the operator too tight: he must, if inexperienced, merely take his cue from others, and, having distinctly fixed his mind on the chief features of practice, the rest he should work out in a common-sense sort of way.

When Pear-trees have young spray enough and to spare, the pruner may at once prune away all immature shoots of the past summer's growth, leaving, of course, sufficient spray for the tying-down system.

Here the beginner will desire to know the difference between mature and immature shoots, and I will inform him. Mature shoots are of a heavy brown colour all the way to their extremity; immature ones are of a paler colour, they bend more easily, and their suppleness is a certain sign of immaturity. Let the learner select a twig, so brown, so old-looking, as to be at first-sight barely distinguishable from two-year-old wood; and let him select one that at a glimpse looks pale and attenuated; let him bend them respectively for a minute, and he will soon discover that the brown, or mature one, possesses double the sturdiness of the pale one—and that not dependent on mere thickness. But he must observe not to mistake the pinched shoots for unripe ones, merely because they have again sprouted after pinching, and, in consequence, have a pale green extremity; such have nothing to do with the character of the first-formed wood on the same twig, and these, when reserved, may simply have the second growth pruned away. But even amongst the mature spray a selection must be made. There is another criterion, of not only maturity, but of a decidedly fruit-bearing tendency, which must be paid high regard to. I mean “shortness of joint,” as practical men term it. Any one, a perfect stranger to fruit-culture, may soon, by taking an interest in the thing, ascertain how this matter stands, and distinguish the shoots readily. The space between each two buds on a young twig is termed, by botanists, the internode; and this varies so much in length as occasionally to be nearly double the length on one twig as compared with another, even on the same tree. Shortness in this internode, then, is a certain sign of a blossoming tendency, and *vice versa*. Practical men judge much by this. And such wood is necessarily better ripened than the other, for it generally ceases to grow many weeks before the other kind of wood.

By the foregoing remarks, surely the most inexperienced may know good wood from bad. I will now pass on. As to the quantity of spray to be left, that will depend on whether any has been previously tied down. In commencing the tying system, the main branches may have to be thinned and rearranged, as advised for “the Plum;” this I need not repeat farther than to observe, that I place my leading branches about nine inches apart, when intended to carry tied-down spray.

In order to give an idea to the beginner as to the quantity of spray, we will first suppose the case of young trees just arrived at the bearing point—say, planted three years. Such trees possess, of course, a tolerable amount of what are termed “natural spurs;” and, verily, if such could be always obtained, there would be little need of the tying-down system.

And to digress for a moment, let me remind ardent young cultivators, that whilst Pears are young, growing nicely, not grossly, and producing lots of these nice natural-looking spurs, or blossom-buds, a young enthusiast might very fairly be pardoned for exclaiming:—“Really these old practioners make too much fuss by half about this tying down, &c.: my trees thrive well without any bother, and I shall not trouble myself about them as long as they continue to produce plenty of blossom-buds.” And right, too, my young friends; no safer maxim than “let well enough alone.” But your trees will grow older, by-and-by; and unless they are of some fortunate kind, or some exemption from the common lot, they will bloom gradually more and more unsatisfactory, until, at last, you will be tempted, in a relaxed spirit, whose patience has been long taxed, to root up and replant. Now, it is just in order to save many a good tree from undeserved destruction, that we, THE COTTAGE GARDENER, so often rush to to the rescue. We have been in your position, believe us, many years since; we have “taken stock” over and over again; and with so much hard-bought wit, and enough of science for our purpose, we feel in a position to give wholesome advice.

My advice in tying-down, then, is, as soon as you find your natural spray becoming treacherous, manifesting a disposition to produce abundance of twigs rather than fruit, from that moment resolve to depend on them entirely no longer; if they choose to bear Pears still, do not be offended with them; if they turn refractory, cut them away, and provide successors.

And this brings me to the real commencement of the tying-down plan. In the case of young trees, a very small sprinkling of young spray may be tied down at first; say one out of every foot up the main branches. As the trees get older, they will require a more liberal amount of tied-down spray, and the more so when a character of wood springs up peculiar to trees of a certain age and condition; I mean that intermediate character between the true blossom-spur and the mere wood-shoot. Such is generally about four inches in length, full of blossom-buds in their embryo, and argues a fine condition as to habit.

And now, as to other pruning besides spray-pruning. Let me advise that all barren spurs which have lengthened, so as to become inconvenient, be pruned away as soon as a tying system is established; and, indeed, as soon as the young tied-down shoots begin to produce their lateral blossom-buds, that all spurs, which become full of lean wood-buds without blossom-buds, be cut entirely away, although well situated. These things done, the young and selected spray may be tied neatly down on the larger branches. I need scarcely say, that all training and pruning will be now completed.

R. ERRINGTON.

A GOSSIP ABOUT SOME RECENTLY INTRODUCED PLANTS.

VARIOUS inquiries having been made respecting the treatment of certain plants, I will endeavour to meet some cases, by noticing all I know respecting a few of them, leaving it to the greater knowledge of others to supplement or correct, where necessary.

1.—CERATOSTEMA LONGIFLORUM.

For this plant we are indebted to the Messrs. Veitch, to whom it was sent by their indefatigable collector, Mr. Lobb, from the elevated regions of Peru, he having found it 12,000 feet above the level of the sea. The plant does not seem likely to grow more than a foot or eighteen inches in height, has small round obovate leaves, like most of the Cranberry section, to which it belongs; and

the great interest connected with it are the beautiful bright scarlet flowers, about a couple of inches in length, which it produces in great abundance. I do not suppose that the plant is so plentiful yet as to have many records of its being tried out-of-doors as a half-hardy plant; but there can be little doubt that it would thrive at the bottom of a conservative wall, with a little protection in winter. As a low-growing, handsome little shrub, it will long be prized as a tenant of a front-shelf of a greenhouse; but requiring merely a sunny, sheltered spot, in a cold, moist pit in the summer. I apprehend, there will be little difficulty in striking half-ripened small side-shoots in sand, under a bell-glass, and kept in a cold pit in summer. A sight of the plant at once demonstrates that heath soil must form a main part of the compost at first, adding fibry loam as the plant gets stronger. Good drainage, and plenty of moisture and sun, when growing, will form chief points in its management.

2.—DESFONTAINEA SPINOSA.

This beautiful plant, possessing the interesting, grotesque "*Touch-me-not*" foliage of a twisted, bristling holly-bush, with rich scarlet tubular flowers, tipped with yellow, and produced rather freely from the axils of the leaves of the young, small branchlets, arrested great attention, when exhibited by the Messrs. Veitch, in the summer of 1853, at Chiswick. It was sent to them by Mr. Lobb, from elevated ground in Valdivia; and, therefore, we can hardly expect that it will ever be hardy enough to do without greenhouse treatment. The Messrs. Veitch would confer a great favour on enthusiastic plant-growers, by giving more in detail the position and the circumstances, as respects soil and elevation, in which plants are found by their collectors; as then, their customers might hope to rival them in the excellence of their productions. Most students of Geography are aware, that according to the distance from the sea—the elevation—and the distance from the snow-crowned Andes and Cordilleras, will the peculiar climate of a place in Chili be distinguished. Plenty of rain during the rainy season—the winter there—falls in the neighbourhood of Valdivia; but, though comparatively little rain falls in the north of the Republic, its want is amply compensated for in heavy dews during the spring, summer, and autumn months. Taken at one and the same time, there is a great difference in the climate in the western and eastern side of the Andes; for while the cloudy, rainy season, exists in Chili, on the other side of the mountain chains, extending towards the Atlantic, there will be the dry season, and a cloudless sun; and *vice versa*. Each division, the east and the west, at these parallels of latitude, have a climate on which they can calculate, as respects rain and sunshine; while the elevation will enable us to form an approximation to the temperature.

Keeping these things in view, and getting what knowledge we instinctively can, by examining and laying hold of the plant; and thus, despite its prickles, making it say something of its wants and requirements, by the application of the professional thumb-screw,—the following seem to be the necessary conditions for its successful cultivation:—

1. A temperature, in winter, seldom below 45°, with a rise of 5° in fine weather, and a rise of 15° in sunshine.

2. The roots, at this time, never to be dry; but sufficiently drained to prevent any thing like stagnation.

3. An open position in summer; either on the front shelf of a greenhouse, or in a cold pit, with the glasses kept on and air given, until mid-autumn, when the sashes may be taken off in fine weather, to harden the young shoots.

4. While the top of the plant is exposed, guarding the pots from direct sunshine, and giving suitable waterings;

remembering, that however bright the sun in Chili, the roots are often protected by a surface of herbage, which breaks the force of the sun's rays, while the rootlets have next to unlimited space over which to travel; and though there are few showers at that time, there will be heavy dews.

5. The growth, at first, must be regulated by a system of training and stopping, so as to secure a good amount of young shoots; these being also thin enough to allow sun and air to play upon the foliage of each, instead of on the foliage of the outside shoots. A year or two must, therefore, be given up to get a fine, bushy specimen.

6. After blooming, and resting a little, the plant must be pruned back slightly, so as to secure fresh shoots; be kept rather close until it breaks freely; and then, if necessary, be repotted in sandy peat and loam, with pieces of charcoal and broken pots, intermixed, to keep the whole soil rather open, though pressed firmly together.

Independently of the singular holly-leaved appearance of this plant, it will also be interesting, as one of the few shrubs belonging to the beautiful family of *Gentianworts*, in which order Botanists, as yet, I believe, are content to have it.

3. PHILESIA BUXIFOLIA.

This plant was also first exhibited at Chiswick, in June, 1853. It seems a nice, branched, shrubby plant, with small, narrow, leathery, evergreen leaves, and pretty, rose-coloured, somewhat bell-shaped, lily-like flowers, about two inches long, produced freely at the points of the branches. Among *Philesiads*, this is the only one of the genus I have seen; and being rather a graceful shrub, it differs very much in its whole appearance from its nearest neighbour, the *Lapageria rosea*, which is a rather free-growing twiner, from a similar district in South America, and which is likely to do well on a conservative wall, and especially in a cool greenhouse. As this *Lapageria* seems to bloom freely in the autumn, it is well worthy of a conservatory column.

The manner in which the flowers of the *Philesia* are produced, at the points of the shoots, supplies the key-note for the mode of culture and pruning. By pinching, stopping, tying-down, and training, a sufficiency of these branchlets must be obtained. After blooming in early summer, pruning must be effected, if it is wished to keep the plant small and handsome. Peat and loam will grow it well.

The hardness of this plant has been frequently inquired about; and I am unable to state how it stood out-of-doors during the last winter and spring. Mr. Veitch found it quite hardy at Exeter, 1852-3; but, though I had the pleasure of seeing Mr. Veitch, from the Exotic Nursery, Chelsea, lately, it never came into my head to ask him about how this plant behaved during the last season, unprotected. One thing our young friends must keep in mind, that Exeter is not Norwich nor Edinburgh. For trying exotics out-of-doors, few places could answer better than Exeter; but, succeeding there, must not always be taken to mean that success will be equally certain north of London. That the plant will grow well against a conservative wall, I have little doubt; and this notice may lead some one to tell how it stood out last winter, if fairly tried.

We hardly think it fair, however, for correspondents to put all sorts of questions about the hardness, the nature, the treatment, &c., of a plant, as soon as it gets out of the introducer's hands. Certainly, in all respects, concerning it, can only be obtained after considerable experience with it; and before that is gained, shrewd guesses can only be arrived at; and all the first-supplied customers start fair for an equal race. Now, Mr. Lobb found this plant in Valdivia, on the summits of high, marshy places, and under the shade

of trees. The leathery appearance of the leaves would have almost hinted that the plant liked a sufficiency of moisture and a little shade; though, when inured to it, it will, no doubt, stand the most of the sun we can give it. The position, the summits of marshy places, would have led us to imagine that the plant was equally, if not more, hardy than the *Desfontainea*; but we arrive at this conclusion as to its greater hardiness, chiefly from recollecting,—though I cannot lay hand on the details,—that the habitat of this plant extends farther to the south, and that it had been found rather plentifully through the Chiloen Archipelago, in Patagonia, and all lands skirting the Straits of Magellan; and in the latter of these places we should not consider the climate, in general, to be superior to the south of England.

4. LILIUM GIGANTEUM.

This is another of Mr. Veitch's, introductions from India, and supposed to be next-door to being hardy in our climate. The elevation of the flowers, near to the point of a stem, some six feet in height, and the great size of the lower arm-like leaves, would always require for it a very sheltered place, such as where the large-leaved and large-flowered *Brugmansia suaveolens* would flourish in summer. The flowers of this wonderful Lily are almost as large as the *Brugmansia*; creamy-white outside, and displaying, by the petals turning back at the points, a fine dash of crimson-purple, about the centre of the inside of each petal. It formed a striking object at the end of a table at Chiswick, in the May Show of 1853. The stem, from being from two to three inches in diameter at the base, tapered gradually to something like a-quarter-of-an-inch at its point. The leaves, large, and on longish footstalks at the base, diminish in size as the stem rises, until, towards the point, the leaves, somewhat alternate fashion, give place to flowers; and, but for their massive size hanging down, the whole plant, stem and leaves, would form a long, regular cane. I am not aware that seeds have ripened, or germinated in this country. Seeds previously imported had not vegetated. Mr. Veitch's plant was from an imported bulb. It has stood severe cold, uninjured, at Exeter. The great use of the plant will, however, consist in ornamenting cool conservatories. As the stem blooms, like an American Aloe, only once, apart from seed, propagation must depend upon the suckers that are freely produced. Judging from analogy, I would say, that when a person was more anxious to increase his stock than to secure a flower-stem, the nipping off the neck of the bulb, when it became of a good size, would, by preventing the flower-stem rising, expedite the protrusion of offsets. Small offsets, however, make their appearance often, even when the main bulb is increasing in strength, and gathering resources for a splendid flower-stem. I have not had the plant under my own care, but I have noticed its peculiarities under the management of some friends; and the following I would deem essential points in its management.

Whatever its hardiness, when I got a small bulb, I would treat it to a temperature and circumstances intermediate between a warm stove and greenhouse, supplying heat and moisture to it during the whole of the spring and summer, so as to enlarge the size, and increase the number of the leaves. I would grow it in peat and loam, enriched with old cow-dung, surface-dressings, or weak manure-waterings. In repeated pottings, the bulb, as it increases in size, should be kept well elevated above the surface of the soil in the pot. The reason for this is, that the rays of the sun, unimpeded by soil, or the rim of the pot, may play freely on the bulb during the autumn months. The time necessary to grow, before you expect a plant to be strong enough to bloom satisfactorily, will depend greatly on the size of the bulb you receive. In the case of a small

bulb, you must not grudge a couple of years. I should like to have the roots, previously, thoroughly occupying, almost to the bursting of, a twelve or eighteen-inch pot. During winter, while thus growing, I would rest the plants by comparative coolness and dryness; but not so dry as an *Amaryllis*, that sheds the whole of its leaves; nor yet so moist as one of that family, that keeps its foliage, as the *Aulica* varieties. As the bulb approached blooming size, the ripening of the bulb in the autumn must be the great consideration; and, therefore, it should get all the sun and air possible, without diminution of heat at first, and with a gradual diminution of water. The mode of applying what little is wanted is of importance. A friend of ours had a fine plant, in September, standing in front of a greenhouse (inside the glass), the pot standing in a large pan of damp sand, no water having been given on the soil in the pot for some time previously. No better plan could be adopted for maintaining a diminished rate of growth, and accelerating, at the same time, the maturing processes; and the plan will be found equally effectual in the case of many other bulbs. In a short time, the pan of damp sand would be removed, and the plant kept cool and dryish during the winter. I shall be deceived, if the advancing heats of spring do not bring with it a strong flower-stem: and the first appearance of growth must, of course, be attended with judicious waterings, and weak manure soakings will tell with advantage. I believe the plant will bloom well without all this care; but in the case of, comparatively, a new plant, and one that is so very striking, a little extra pains is well rewarded. A succession of flowering plants must thus be obtained by a succession of younger ones.

I have frequently thought, how nice an avenue of these Lilies would look, alternating with the blue *Campanula pyramidalis*, one of those splendid old plants which should never be allowed to get out of fashion. I felt quite tantalised and ashamed of my neglect, on seeing some fine specimens of this *Campanula*, in different places, in windows. We ought ever to be grateful to these collectors, who risk health and life in securing floral novelties for us; but, above all should we prize those beauties that the peasant may possess as well as the peer.

R. FISH.

DIONÆA MUSCIPULA.

THE generic name of this wonderfully curious plant is derived from *Dione*, one of the names of the heathen goddess Venus; and the second, or specific name, means *Flycatcher*; so that, together, we have our English name Venus's Flytrap or Catcher. There are very few plants, indeed, that so admirably display the wonders of the creative-power of Him who spake and it was done; who commanded and it stood fast. The wonderful economy of this plant is sufficient in itself to silence for ever the proud conceit of the infidel, who ascribes every created thing to blind chance, or to an imaginary necessity which he calls "nature." To the Christian, every such plant that may come under his observation, is only one other demonstration of the Creator's wisdom.

The *Dionæa Muscipula* is a low-growing evergreen plant, found in the swamps of Carolina, having in many points, a considerable resemblance to our almost equally curious plant, called *Sundew*, which may be found growing plentifully in wet bogs amongst the white bog moss, the Sphagnum, so useful to the Orchid cultivator. The leaves of *Dionæa* are placed on their foot-stalks apparently in pairs, though, in reality, they are only wings of one leaf, which, when expanded, are nearly round. On the margins of these wings there are long, stiffish hairs, placed alternately to each other. In the

contro of each of these lobes, or wings, there are three or four hair-like teeth, which have the power of irritating over the whole leaf when touched. They are, as it were, the bait to tempt a fly to light upon the leaf, and the moment it does so, the leaves close upon it, the hairs on the margin interlacing each other as the fingers of a man's hands would do to clutch anything, and hold it fast. The fly may struggle, but it is vain; the trap holds it firm till it dies, or, as we may suppose, as long as the motions of the fly to escape continue to provoke the irritable power in the leaf. The late Mr. Knight supposed, and also some authors before him, that the gases arising from the dead bodies of insects so caught and killed are useful to the well-being of the plant; and I have known some cultivators, holding and agreeing to such an opinion, place small pieces of animal flesh near the plants, to encourage still more their growth; but, I must confess, that I never could induce a plant to grow more freely with such animal food. Plants that had no flesh near them flourished, with proper management, equally as well without it. In fact, we may consider this an exploded idea. The use of this power of catching and killing flies, is another of these mysteries that man, with all his boasted power, cannot penetrate. The plant flowers, throwing up a stem six or seven inches high, producing small white flowers, which require a magnifier to see all their beauty. It is the curious mechanism, and irritability of the leaves, that render this plant interesting to the cultivator. The closing of the leaves may be artificially caused by touching the spines on the leaf with a straw; but this must not be practised too often, or if it is, the leaf will be injured and die.

This highly interesting and curious plant has been long in this country, but is yet rare, because its culture has been, and perhaps is, yet, imperfectly understood; and, in consequence, it is one that I have taken under my wing, to make its culture better known. I trust the above very feeble description will have excited a desire, in some of our readers that have the necessary conveniences, to obtain a plant (it is not expensive), to try their skill, with the information I am about to lay before them in cultivating it.

It requires a moderate *temperature*, rather more than a greenhouse, and not so high as an Orchid-house; a moderate stove will suit it well, with the thermometer varying in summer 65° to 80°, and in winter from 55° to 60°.

The *soil* for it should be fibry peat, with some chopped sphagnum, and small pieces of broken pots amongst it.

Culture.—The pot containing the plant should be, in size, in proportion to the size of the plant. The largest I ever saw was in a 6-inch pot. Let it be well drained, and set the pot in a common garden-pan or saucer, filling it with moss gently put in. Set a bell-glass over the plant just within the pot; but let it have air by propping up the glass every day; and in summer, the glass may be with advantage left off for an hour or two in the morning, and also in the afternoon. Keep the pan full of water, and shade the plant from the midday sun. Though this plant catches flies, yet it cannot protect itself from the devouring slug. That enemy must be diligently sought for whenever its treacherous approaches are observed by the slime it marks its track with. By this careful method constantly followed, the plant will thrive and grow progressively, and produce in abundance its wonderfully-formed leaves.

Propagation.—This may be accomplished three ways.

By Seeds.—The plants do not always mature seeds, but when they do, let the glasses remain off longer than usual to ripen it. As soon as that takes place, prepare a pot to receive them, by filling it with the above-described compost, and covering the surface with a thin layer finely sifted, then scatter on it the seeds, covering them as thinly as possible with silver-sand.

Set the pot in a pan of water without watering the soil, and place a bell-glass over the whole, large enough to enclose the pan also. In this humid atmosphere the seeds will quickly germinate, and as soon as the plants are visible, give a little air daily. As soon as they can be taken hold of, transplant them into the smallest pots made, and place them under a hand-light till they become large enough to repot, when they may be placed and treated like the established plant.

By Division.—If a plant thrives well, it will send up offsets round the base of the old plant. When these have roots of their own, they may be carefully divided off the main plant with a small sharp knife, retaining all their roots; pot them into small pots in the compost, and treat them in the same way as the young seedlings, only shade them more closely till fresh roots are emitted; then gradually inure them to bear light and air; afterwards repot them as they require it, treating them like the mother-plant as they advance in size.

By Leaves.—When the plants neither produce seeds nor offsets, and increase is anxiously desired, then take off a leaf or two, lay them on white moss chopped fine, in a pot covered close with a bell-glass, and densely shade them from the sun. They will, though I must confess not freely, form a plant or two on the margin of the leaf. When that takes place, and roots are emitted, give a thinner shade, and a small quantity of air for an hour or two every day, increasing the quantity of air, and lessening the shade as the plants advance in growth. When fairly established, pot them off, replace them under a bell-glass, the pot being set in a shallow pan of water; and afterwards repot them, and treat them like the others.

T. APPLEBY.

HARDY FERNS.

It is with great pleasure that I commence writing about these lovely plants, the hardy Ferns, and that pleasure arises chiefly from the fact, that any one possessing a few perches of ground may grow the most of the species that I shall treat upon; and, therefore, I am somewhat sanguine that my remarks, the result of many years experience, will be, or may be, useful to a great number of the readers of THE COTTAGE GARDENER. It also pleases me to write about them, because they are great favourites with myself, as much so, or more, than any other tribe of plants, always excepting the Orchids. "The labour we delight in physics pain," was said by one of our greatest poets; by which he meant, that any trouble we bestow upon what we delight in, is purged away by the pleasure we anticipate and receive in doing it. Though these charming plants are at this day grown by many persons, yet, I think the cultivation of them is on the increase; and, I trust, when my instructions are completed, and, I hope, understood, that many more persons will be induced to turn their attention to, and enjoy the pleasure of growing them.

They may be grown on the highest hills, and in the lowest vales. Many of them will bear the smoke of large towns, flourishing where few other plants will live; they will grow in the shade of trees, or shrubs, and on the naked exposed rock; some will only thrive in boggy, wet swamps; whilst others will grow on old walls; in fact, there are few places where a judicious selection of the proper species for right situations will not thrive. These selections, and situations for them, it will be my business in the forthcoming pages to point out.

To grow the greatest number of species, two methods may be resorted to. The first (which is the best), is to form a spot to grow them in the open air, by imitating the various positions in which they are found growing wild. This includes rockwork formed with stones,

scoria, and stumps of trees, with a plot of ground in front, in which to plant such as are found in wet, or shady places. This rockery, if judiciously formed, will, of itself, be a pleasing object, and in many situations, where the materials are plentiful, will not be very expensive.

The other method is to grow them in pots, plunging the commonest and hardiest species in ashes, or old tan, and placing the more tender, or rock-inhabiting species, in a cold pit, or frame. This plan has its advantages and disadvantages. The first is, that a greater number may be grown in a small space, and the tenderer kinds protected both from the cold and damp of winter, and the scorching rays of the sun in summer; the drawbacks on this method are, that they cannot possibly make such fine fronds in pots, unless grown in a greenhouse, as they will in the open air, on a Fernery formed purposely for them. Now the choice between these two ways of growing them rests upon the space the cultivator has at command. If he has a place in his grounds where a Fernery can be formed, I would say, by all means set about it at once, if you wish to see them thrive well; but if your space is limited, and a rock-work impossible to be formed without interfering with the arrangement of the garden, then, if you are still desirous of having a collection of Ferns, grow them in pots; but, for your comfort, let me tell you, that a great number of species will grow in the common soil and borders of your villa garden.

I saw, a few days ago, in the garden of Mrs. Priestley, the Grove, Chalfont, Bucks, the finest specimen I ever met with of that beautiful Fern, the *Grammitis ceterach*, growing in the open border. It was nine or ten inches high, and six or seven inches across, forming a dense little bush of exceedingly fine fronds. The soil is stony, but had been mixed with heath-mould, and the plant had thriven well in it undisturbed and unprotected for many years. Now, this species is generally found wild, growing in crevices of rocks and on old decaying stone-walls. I have seen and gathered it in the latter, situated on the road-side leading to and from the railway-station at Tetbury, in Gloucestershire; but the wild specimens were pygmies compared with the one in the border of Mrs. Priestley's garden. I, from this fact, am inclined to think that a dry border would grow many species that we usually consider require rockwork to grow them on; but, as every rock species has not been tried in such a border, it would not be advisable to risk the entire stock in such an experiment. More common species, such as *Polypodium vulgare*, *Scelopendrium officinarum*, and the common male and female Ferns, and many others, where the stock is plentiful, might be planted out at once in common borders.

A third method of growing a collection of Ferns may be adopted, where rockwork cannot be formed, and the trouble of growing them in pots is objected to, and that is, to throw up a bank of earth, three or four feet high, either in a circle or longitudinally, forming it into, as it were, narrow terraces, some nine inches or a foot wide. The face, or upright part, to be built with small stones, or flints. If the circular form is adopted, then an opening should be left through the bank to enter within the circle, and the inner sides of the bank should be planted with Ferns loving shade; and a circular flat bed within the walk, formed at the foot of the bank, would be an excellent place for Ferns growing in wet places, the *Osmunda regalis*, for instance. The outside terraces of the bank would be an excellent position for Ferns found wild on high grounds or rocky situations.

If a long, straight bank should, from choice or space, be considered preferable to a circle, then let it be formed to run east and west, the south side to receive Ferns that are naturally found on rocks exposed to the sun; but, as those are few in number, compared with such as

grow in shady, moist places, the bank should be formed much broader on the north side than the south, a thing easily done by carrying it out further on that side. The material of the bank may consist of almost anything; even clay would not be objectionable, only let there be a sufficient bed of good, proper soil for the Ferns to grow in. The soil for each species I will mention when I describe them; but a general compost, which will suit the greater part, consists of sandy-peat, leaf-mould, and loam, in equal parts. Great care, however, must be taken, that neither in the material of which the bank is formed, nor in the soil, there are any roots of perennial weeds, such as Thistles, Nettles, the Creeping Convolvulus, Coltsfoot, or Couch-grass. When any of these are left in, they are very difficult to eradicate. Avoid them as you would the plague.

T. APPLEBY.

(To be continued.)

PREPARING MANURE.

THE autumn of each year forms an excellent time to collect the various materials which are to compose the "compost-heap." Decayed herbage of various kinds, as well as vegetables and flowering plants, no longer worth a place in their late quarters, as well as weeds and other matters, ought all to be collected together; and all such as decay readily may at once be thrown into a heap, while other things, which take a longer time, as the stalks of Asparagus and all woody matters, ought either to be allowed a longer time, or disposed of another way, by burning, or charring, which means only half-burning. This latter process is somewhat difficult to accomplish, so that it will be well to treat of it separately; but the mode of dealing with the compost-heap is so well known, that it need only be slightly referred to here; but, at the same time, it is proper to urge on all, having the means at their disposal, to make it as large as possible, for they will find its uses all but universal.

To the compost-heap we, therefore, direct all the garden refuse to be at once conveyed, except such as may be dealt with in a more summary way, as, for instance, such crops as Lettuce, Spinach, and other things, which may as well be dug in when they are taken off, as also the leaves of Cabbages, &c.; but their hard, woody stalks had better not be dug into ground intended for a similar crop again, for they frequently become the means of fostering a multitude of insects of various kinds, to the detriment of tender plants that may follow them. These stalks it would be better to take to the heap where the charring or burning is intended to take place, and convey only such to the compost-heap as a few months will suffice to reduce into a condition fit to go back again; for that purpose, it would be well to keep away as many of the noxious perennial weeds as can be done, as Nettles, Docks, Dandelions, Horseradish, Jerusalem Artichokes, and the like; but all annual weeds, Grass, useless vegetable matter, cuttings from the flower-beds, refuse from the potting-shed, and many other things, had better be at once carried away to the compost-heap, where they will decay, so as to form an excellent material for manuring purposes, of which there will always be plenty. The compost-heap had better also be divided into two or more parts, one to contain the best or richest portion, the other the more coarse or stony; both being accessible at all times, will be continually receiving accession of matter; so that, in fact, the portion of absolutely useless stuff will be comparatively small, and must depend on what the place consists of; large, rough stones are inadmissible in a place where such abound already, while they may be very useful on ground of an opposite character; the purpose of the compost-heap, or, in fact, of all manuring, is to supply the ground with

something that it is most in need of—something that the preceding crop has robbed it of—or something better than what it consists of; to both of these purposes the compost-heap offers many advantages.

In preparing the heap of rougher materials, recourse may be had to charring, or burning, which is not only the quickest and readiest way, but probably the best for getting rid of a quantity of matter not by any means an agreeable object to look upon. Burning into ashes is the most general way; and as there is often matter added of a kind which it would be impossible to stop combustion at the exact plan called “charring,” it is better and more easily done to add such neutral matters as benefit by the action of the fire, and increase the quantity of ashes, clay, or earthy matters, as well as roots and various other odds and ends, will present themselves; so that the heap, while in action, will be kept burning sundry matters at once, differing from each other in their combustible qualities, but all tending to increase the heap of useful matter which composes the residuum.

In compost-heaps, commonly so called, many things enter into their composition which are at variance with each other, and sometimes injury is done by mixing two that are diametrically opposed to each other, the opposing qualities they have to each other being such as to occasion their injuring each other rather than forming a useful compound; for instance, chalk and heath, or peat mould, are both useful things in their way, but they are violent enemies to each other, and when put in contact devour each other with avidity. Now this ought not to be so, for the antagonistic properties these two substances have, are such as create a great waste when they are brought to work on each other; but take either of them alone, and they may, with advantage, be used on ground of an intermediate character, for the crop will only appropriate to itself such juices as are most in accordance with its wants, leaving the ground in possession of the remaining parts, which, perhaps, being not exactly of the kind wanted to feed the crops put upon it, may very likely remain some time unconsumed. Finally, there is no doubt but it will be wanted; for vegetation is so accommodating, that it quickly assimilates to itself food of a different kind from what it originally started upon; some plants have greater powers that way than others. Neither does it happen that wild, indigenous ones are gifted with the most of it, for some of the British Orchids refuse to flourish anywhere but on their native hills; and the same may be said of some Ferns and other plants; while the pretty little *Myosotis palustris* is found in almost every ditch or pond-side, while it is equally plentiful in dry banks and corn-fields; but in the damper situation it is more luxuriant and beautiful. However, most cultivated plants have a less extended range, and their treatment, as respects the quality of food, &c., furnished them, must be regulated accordingly. Nevertheless, as a general rule, the more robust-growing ones require most support, and it is not easy to err on the side of abundance, except, that such crops as Potatoes are sometimes rendered coarse by it, and those meant to stand the winter are not always benefited by its too liberal use; but in almost all other cases, the dung barrow is a welcome visitor to the heavily-cropped quarters of the kitchen-garden.

In making up the compost-heap, I do not by any means advise clean, useful tree-leaves to be mixed up there until they have done some service in the forcing way. Neither do I recommend anything to be carried there that might with more convenience be used where it is. For instance, small weeds, which it is impossible to separate from the soil, had better be dug in somewhere near where they are collected together, if such an opportunity offers, and many other things may be done in a similar way; the compost-heap being for such as

cannot well be used elsewhere, but which, by fermenting a sort of store or reserve, may be of great service hereafter, and will form a sort of reserve to fly to when a “barrow-load” of good stuff is wanted, as well as a nucleus on which to collect other things not otherwise wanted at the moment; while it will, perhaps, be advisable to augment the whole by wheeling or carting thither, earth, mortar rubbish, or any other substance that may be at liberty, so that the whole, when well blended by repeated turnings, which it must have, may present the most useful mixture.

J. ROBSON.

ALLOTMENT FARMING.—DECEMBER.

WE have now fairly turned our back on the autumn, and our cottage friends must depend for their comforts, in a high degree, on the fruits of their past industry. Need I remind them of the pleasurable sensations that await those, who, with the natural exultations of honest industry, look back on a well-spent summer, as compared with the feelings of those whose conscience tells them they have forfeited all claim to what the world calls comforts. But it is not in the creature comforts alone that happiness, or rather, peace of mind, must be sought; man has nobler powers of enjoyment, and those who are well assured of having steadily pursued the one great aim of honest industry,—justifiable and commendable, before God and man,—will feel an inward peace and comfort, which it is not easy to describe. And this is not a thing confined to the high-born, or the highly talented; indeed, it is highly probable, that the poor cottager has more chance of comforts of this kind than the affluent.

Although, doubtless, these facts are tolerably familiar to many of our allotment and cottage friends, yet there can be no harm in reminding them of the blessings which are, at least, within their reach, and in urging them to gratitude to the “Great Giver of all good things;” and here I would ask, whether grateful hearts can be miserable hearts?

I much fear that our cottage friends will not enjoy that invaluable root, the POTATO, so fairly as the past fine summer had, at one time, led us to expect. The disease has, after all, been rather too busy with many “stocks;” although not by any means of the virulent character of former years.

During the first two weeks of November this root has risen in price in a most astonishing way; even our “Blue Farmer,” which, although an excellent eating Potato, is seldom of very high price, is quoted at four shillings per bushel, and those, too, simply the ordinary stock. But this sudden lift in price, cannot, I think, be traced to the “rot,” through disease; and certainly not to the narrow breadth planted. The former of these has, no doubt, exercised a due share of influence in the affair, but it is to the high price of bread stuffs, generally, that we must look for the greatest bias. And whence the cause of this, our cottage friends may ask, of high prices in the latter article? This is not easy to trace, I confess; but doubtless, this sad war, in which we are unhappily, though justly, engaged, has a hand, however indirect, in producing this state of things.

But apart from the consideration of causes, what advice may be offered to our allotment and cottage friends under such circumstances? In the first place, I would ask, have you secured what seed Potatoes you want for the ensuing year? Have they been selected with care, and preserved with attention to restoring principles, which they equally demand and deserve? I need not go over the old ground again at this moment, and chat about the management of the “seed.” I may just say thus much; select betimes from undiseased seed, and from kinds well known to suit your district; in preserving them, keep them as cool as you can; and, above all things pretty dry; added to this, in thin layers, if possible, and in a darkish place. As to autumn-planting, it cannot, I am aware, be objected to on the score of principle; but when we take into consideration the mischances that may occur through a long, and, possibly, a wet winter, together with the chances that offer for preparatory processes in the way of ameliorating the soil by digging, and thereby mellowing and sweetening it, I think that it is safer to plant in March and April.

Of course, STORE ROOTS have been secured by this time, according to our advice in former Numbers; and the succeeding crop taken into consideration.

As little remains to be done with what few vegetables may still remain out, attention must be at once paid to business, consistent with the ensuing year.

DRAINING.—Removing superfluous water from the soil is the first step; such, at this period, will accumulate in a prejudicial degree on even sound soil; what, then, must be the fate of those of a retentive character, with a wet subsoil? Whether by a temporary surface drains, or by thorough drainage,—the superiority of the latter, of course, I need not urge,—the water should be passed away.

TRENCHING must be thought of too. Now is the period to benefit land by both deep trenching and by ridging. Where soils are somewhat shallow, a little of the subsoil should be brought up at every trenching; at least, if it is at all tolerable in character. I need hardly say, that it is not worth while to bring up clay where the surface soil is adhesive, or to bring up sand or gravel where the surface soil is so light as to be apt to burn; common sense must prevail.

And now, whilst out-door business is at a stand-still, as it were, let not the long winter evenings be without their use; let the allotment-holder or cottager look over and examine his past labours, and see whether he cannot find something to amend, and use his endeavours to advance with the rest of society; for, assuredly, nothing can remain stationary in these times, and in this kingdom. About a future year's cropping, advice has been repeatedly given; this is the period for digesting the next year's plans, and for preparing every thing with reference to them. Let no man fancy there is no room for advance; in every succeeding season there will be progress, strange as it may seem, even to the end of time.

Amongst other matters, let the *manure-heap* have a full share of consideration. The older portion may be turned, if such has not been done; and if such is to be the case, any scrapings of walks, roads, &c., any sweepings, or, in fact, any residue, even mere waste soil, may be added previously, to increase the bulk of the heap; by such means, an industrious man will make one load into a couple. Be it understood, too, that such composts are of more benefit in most cases than manure alone, especially if clotted. I will now close my advice with a list of the seeds for the allotment-holder or cottager: it will soon be time to procure them.

PEAS.—Bedman's Imperial, Blue Prussian.

BROAD BEANS.—Hangdown-Longpod, Windsor.

KIDNEY BEANS.—Scarlet Runner, and Pale Dun Dwarf.

ONIONS.—Deptford, White Spanish, Tripoli.

CARROTS.—True Horn (for early), Altringham, large.

LETTUCE.—Bath Cos, Ady's Cos, Hammersmith.

CABBAGES.—Barnes' True Dwarf, Matchless, Drumhead and Cattle.

BROCOLI.—Capes, Sprouting, Snow's Winter.

CELERY.—Cole's Crystal, Manchester Red.

RHUBARB.—"Linnaeus."

TURNIPS.—Skirving's Swede, Dutch, Orange Jelly.

PARSNIPS.—The Hollow Crowned.

It is always better to buy of a first-rate seedsman; a much inferior article is often dealt out, apparently cheap, at small, country shops. Seeds bad in quality or kind are too dear at a gift.

R. ERRINGTON.

NORFOLK AND EASTERN COUNTIES EXHIBITION OF POULTRY.

THIS, as a whole, was a very superior Exhibition. It was held on the 14th, 15th, and 16th instant, at the Corn Hall, Norwich. The judges were Mr. Baily and Mr. Catling, of London.

The Earl of Leicester's Prize for the best collection of Poultry was awarded to Mr. G. C. Adkins, Edgbaston, Birmingham.

Class A.—SHANGHAI.—For the best Cock of any age or colour, shown separately.—11. Prize, George Read, Scole, Norfolk. Age, eight months. *Highly Commended.*—3. G. W. Boothby, Holme Cottage, Lough, Lincolnshire. Age, one year. 6a. *Commended.*—Robert S. Howe, Palgrave, Suffolk. Age, eighteen months. (Cinnamon.)

Class B.—For the best Hen of any age or colour, shown separately.—

14. Prize, Charles Punchard, Blunt's Hall, Haverhill. Age, exceeding one year. *Highly Commended.*—8. Rev. Arthur Gilbert, Grimstone, Lynn. Age, six months. 19. John Fairlie, Cheveley Park. Age, above one year. 21. Charles Spencer, Cawston.

Class C.—SPANISH.—For the best Cock of any age or colour, shown separately.—1. Prize, Honble. Mrs. D. Astley, Melton Constable. Age, eighteen months.

Class D.—For the best Hen of any age or colour, shown separately.—2. Prize, Parkins Jones, High-street, Fulham. Age, two years.

Class E.—DORRING.—For the best Cock of any age or colour, shown separately.—1. Prize, Honble. Mrs. D. Astley, Melton Constable. Age, seven months. *Highly Commended.*—4. James Monsey, Thorn Lane, Norwich. Age, six months.

Class F.—For the best Hen of any age or colour, shown separately.—0. Prize, Honble. Mrs. D. Astley, Melton Constable. Age, over one year.

Class G.—GAME.—For the best Cock of any age or colour, shown separately.—1. Prize, G. C. Adkins, Edgbaston. Age, not known. *Highly Commended.*—3. G. A. Marsham, Stratton Strawless. 5a. *Commended.*—James Monsey, Thorn Lane, Norwich. (Brown-breasted.) Age, two years. (A good class.)

Class H.—For the best Hen of any age or colour, shown separately.—4. Prize, James Monsey, Thorn Lane, Norwich. Age, eighteen months. *Commended.*—2. Rev. T. L. Fellowes, Beighton Rectory. Age, over one year.

Class I.—HAMBURGH.—For the best Cock of any age or colour, shown separately.—1. Prize, Edward P. Archer, Stowmarket. Age, hatched 1853. *Commended.*—4. Rev. T. L. Fellowes, Beighton Rectory. Age, over one year.

Class J.—For the best Hen of any age or colour, shown separately.—3. Prize, H. P. Dowson, Geldeston. Age, six months. *Highly Commended.*—1. G. C. Adkins, Edgbaston. Age not known. 5. Rev. T. L. Fellowes, Beighton Rectory. Age, over one year.

Class 1.—SHANGHAI (Cinnamon or Buff).—Birds exceeding one year old.—7. First prize, John Fairlie, Cheveley Park. Age, above one year. 1. Second prize, G. C. Adkins, Edgbaston. Age not known. *Highly Commended.*—2. Rev. Arthur Gilbert, Grimstone, Lynn. Age, exceeding one year.

Class 2.—SHANGHAI (Cinnamon or Buff).—Chicken of 1854.—5. First prize, Major Cockburn, Bracondale, Norwich. Age, six months. 18. Second prize, George Read, Scole, Norfolk. Age, March and April. *Very Highly Commended.*—28. John Fairlie, Cheveley Park. Age, nine months. *Highly Commended.*—29. John Fairlie, Cheveley Park. Age, eight months. 11. Rev. Clement Gilbert, Hensby, Yarmouth. Age, eight months. *Commended.*—10. Rev. George Gilbert, Chedgrave, Loddon, Norfolk. Age, pullets six months, cockerel seven-and-a-half months. 17. Charles Punchard, Blunt's Hall, Haverhill. Age, eight months.

Class 3.—SHANGHAI (Brown or Partridge).—Birds exceeding one year old.—1. First prize, G. C. Adkins, Edgbaston. Age not known. 3. Second prize, John Fairlie, Cheveley Park. Age, above one year.

Class 4.—SHANGHAI (Brown or Partridge).—Chicken of 1854.—3. First prize, James Garrard, Cheveley. Age, seven-and-a-half months. 2. Second prize, James Garrard, Cheveley. Age, eight-and-a-half months.

Class 5.—SHANGHAI (White).—Birds exceeding one year old.—5. First prize, John Fairlie, Cheveley Park. Age, above one year. Second prize withheld.

Class 6.—SHANGHAI (White).—Chicken of 1854.—3. First prize, Wm. Dawson, Upper House, Mirfield, Dewsbury. Age, March 26, 1854. *Commended.*—6. R. B. Martin, Hemingstone Hall, Needham Market. Age, five months.

Class 7.—SHANGHAI (Black).—Birds exceeding one year old.—Prize withheld.

Class 8.—SHANGHAI (Black).—Chicken of 1854.—4. First prize, Isaac Jecks, Trowse Lodge, Norwich. Age, sixteen weeks. 6. Second prize, John Fairlie, Cheveley Park. Age, eight-and-a-half months.

Class 9.—BRAMAH POOTRA.—Birds exceeding one year old.—4. First prize, John Fairlie, Cheveley Park. Age, above a year. 2. Second prize, Joseph S. Brand, Great Yarmouth. (Imported.) Age, fourteen months.

Class 10.—BRAMAH POOTRA.—Chicken of 1854.—6. First prize, Chas. H. Crosse, New Square, Cambridge. Age, six-and-a-half months. 13. Second prize, H. Peck, Haverhill. *Highly Commended.*—7. John Chater, Haverhill. Age, eight months. 11. John Peeling, Downing College, Cambridge. Age, nine months. *Commended.*—12. H. Peck, Haverhill.

Class 11.—SPANISH.—Birds exceeding one year old.—1. First prize, Honble. Mrs. D. Astley, Melton Constable. Age, cock eighteen months, hen two years. 4. Second prize, Earl of Leicester, Holkham Hall. Age, exceeding one year.

Class 12.—SPANISH.—Chicken of 1854.—12. First prize, John G. Ramsden, Twickenham, Middlesex. Age, eight months. 14. Second prize, John G. Ramsden, Twickenham, Middlesex. Age, eight months. *Very Highly Commended.*—13. John G. Ramsden, Twickenham, Middlesex. Age, eight months. *Commended.*—3. Honble. Mrs. D. Astley, Melton Constable. Age, seven months. 6. Major Cockburn, Bracondale, Norwich. Age, six months. (Class good.)

Class 13.—DORRING (White).—Birds exceeding one year old.—2. First prize, Joseph Robins, Dartford, Kent. Age, exceeding a year. 1. Second prize, Rev. Edward Priest, Cringleford. Age, seventeen months.

Class 14.—DORRING (White).—Chicken of 1854.—No entry.

Class 15.—DORRING (Coloured).—Birds exceeding one year old.—

2. First prize, Honble. Mrs. D. Astley, Melton Constable. Full age. 4. Second prize, Rev. Philip Gurdon, Cranworth Rectory, Shipdham. Aged.

Class 16.—DORLING (Coloured).—Chicken of 1854.—3. First prize, F. L'Estrange Astley, Burgh Hall, Thetford. (Double-combed.) Age, four months. 5. Second prize, Honble. Mrs. D. Astley, Melton Constable. Age, seven months. *Very Highly Commended*.—9. G. F. Drake, Catton Old Hall. Age, hatched 20th of March, 1854. 11. Rev. Philip Gurdon, Cranworth Rectory, Shipdham. Age, six months and two weeks. *Highly Commended*.—4. Honble. Mrs. D. Astley, Melton Constable. Age, seven months. 17. Earl of Leicester, Holkham Hall. Age, twenty-nine weeks. *Commended*.—8. G. F. Drake, Catton Old Hall. Age, hatched 20th of April, 1854. 14. Rev. Herbert S. Hawkins, Henny Rectory, Sudbury. Age, hatched May, 1854. 15. Edwd. A. Kittoe, Chadwell Rectory, Greys, Essex. Age, seven months.

Class 17.—GAME (White and Pile).—Birds exceeding one year old.—6. First prize, James Monsey, Thorn Lane, Norwich. (Pile.) Age, eighteen months. 4. Second prize, Rev. T. L. Fellowes, Beighton Rectory. Age, over a year. *Highly Commended*.—8. Alfred Thorpe, Carrow, Norwich. Aged. *Commended*.—5. James Monsey, Thorn Lane, Norwich. (Pure White.) Age, eighteen months.

Class 18.—GAME (White and Pile).—Chicken of 1854.—8. First prize, James Monsey, Thorn Lane, Norwich. (Pile.) Age, seven months. 5. Second prize, William Groom, Holt. Age, hatched March. *Highly Commended*.—7. James Monsey, Thorn Lane, Norwich. (Pure White.) Age, five months. 9. James Monsey, Thorn Lane, Norwich. (Pile.) Age, six months.

Class 19.—GAME (Black-breasted and other Reds).—Birds exceeding one year old.—1. First prize, G. C. Adkins, Edgbaston. Age not known. 11. Second prize, Thomas Rix, St. Miles', Norwich. Age, two years. *Highly Commended*.—8. Edward Muskett, Abbey Ruins, Bury St. Edmund's. Age, one year and seven months. *Commended*.—9. James Monsey, Thorn Lane, Norwich. Age, two years. 10. James Monsey, Thorn Lane, Norwich. Age, eighteen months.

Class 20.—GAME (Black-breasted and other Reds).—Chicken of 1854.—14. First prize, James Monsey, Thorn Lane, Norwich. Age, six months. *Highly Commended*.—3. R. Bacon, Norwich. Age, six months. 9. Philip Gould, Diss. Age, hatched April, 1854. *Commended*.—2. R. Bacon, Norwich. Age, six months. 6. Geo. Ellis, Bury St. Edmund's. (Gurney's All Fours.) Age, eight months.

Class 21.—GAME (Any other colour).—Birds exceeding one year old. 7. First prize, E. H. Strange, Amptill. (Duckwing.) Age, eighteen months. 1. Second prize, G. C. Adkins, Edgbaston. (Birchen Grey.) Age not known. *Highly Commended*.—6. James Monsey, Thorn Lane, Norwich. (Duckwing.) Age, eighteen months.

Class 22.—GAME (Any other colour).—Chicken of 1854.—1. First prize, Philip Gould, Diss. (Duckwing Grays.) Age, hatched April, 1854. 4. Second prize, James Monsey, Thorn Lane, Norwich. (Duckwing.) Age, six months.

Class 23.—MALAYS.—Birds exceeding one year old.—1. First prize, Frederick Alexander, Reydon, Suffolk. Aged. (Second prize withheld.)

Class 24.—MALAYS.—Chicken of 1854.—1. First prize, Rev. T. L. Fellowes, Beighton Rectory. Age, under five months. (Second prize withheld.)

Class 25.—POLAND (Black, with White Crests).—Birds exceeding one year old.—1. First prize, G. C. Adkins, Edgbaston. Age not known. 2. Second prize, F. L'Estrange Astley, Burgh Hall, Thetford. Age, one year. *Highly Commended*.—2a. Honble. Mrs. D. Astley, Melton Constable. Age, over a year.

Class 26.—POLAND (Black, with White Crests).—Chicken of 1854.—2. First prize, Stephen Fountain, St. Miles', Norwich. Age, eight months. 5. Second prize, Robert S. Howe, Palgrave, Suffolk. Age, hatched June, 1854.

Class 27.—POLAND (Golden).—Birds exceeding one year old.—3. First prize, Edward H. Strange, Amptill. Age, cock thirty months, hens eighteen months. 1. Second prize, G. W. Boothby, Holme Cottage, Louth, Lincolnshire. Age, two years.

Class 28.—POLAND (Golden).—Chicken of 1854.—3. First prize, Edward H. Strange, Amptill. Age, cock five months, pullet six months. (Second prize withheld.)

Class 29.—POLAND (Silver).—Birds exceeding one year old.—3. First prize, G. C. Adkins, Edgbaston. Age not known. 7. Second prize, Parkins Jones, High-street, Fulham. Age, cock and one hen two-and-a-half years, one hen one-and-a-half year. *Commended*.—1. William Archer, Great Yarmouth. Age, two years and three months. 2. William Archer, Great Yarmouth. Age, one year and three months. 6. Charles Dashwood, Thornage, Thetford. Age, seventeen months.

Class 30.—POLAND (Silver).—Chicken of 1854.—2. First prize, G. C. Adkins, Edgbaston, Birmingham. Age, seven months. 11. Second prize, James Monsey, Thorn Lane, Norwich. Age, ten months.

Class 31.—HAMBURGH (Golden-pencilled).—Birds exceeding one year old.—5. Thomas Thorpe, St. Mary's. Age, various.

Class 32.—HAMBURGH (Golden-pencilled).—Chicken of 1854.—4. First prize, H. P. Dowson, Geldestone, Beccles. Age, six months. 1. Second prize, Edward P. Archer, Stowmarket. Age, hatched May. *Commended*.—9. Charles R. Titterton, Snow Hill, Birmingham. Age, six and seven months.

Class 33.—HAMBURGH (Golden-spangled).—Birds exceeding one year old.—1. First prize, G. C. Adkins, Edgbaston. Age not known. 2. Second prize, H. P. Dowson, Geldestone, Beccles. Age, eighteen months.

Class 34.—HAMBURGH (Golden-spangled).—Chicken of 1854.—4. First prize, Joseph Robins, Dartford, Kent. 3. Second prize, Rev. T. L. Fellowes, Beighton Rectory. Age, under five months.

Class 35.—HAMBURGH (Silver-pencilled).—Birds exceeding one year old.—3. First prize, Charles Dashwood, Thornage, Thetford. Age, eighteen months. 2. Second prize, Major Cockburn, Bracondale, Norwich. Aged.

Class 36.—HAMBURGH (Silver-pencilled).—Chicken of 1854.—10. First prize, W. R. Haggard, Bradenham Hall, Shipdham. Age, hatched April. 7. Second prize, Rev. T. L. Fellowes, Beighton Rectory. Age, under five months. *Very Highly Commended*.—11. W. R. Haggard, Bradenham Hall, Shipdham. Age, hatched April. *Highly Commended*.—2. G. Botham, Wexham Court, Slough. Age, cock and pullet hatched April, one pullet, July. *Commended*.—20. H. Peck, Haverhill. (A good class.)

Class 37.—HAMBURGH (Silver-spangled).—Birds exceeding one year old.—2. First prize, H. P. Dowson, Geldestone, Beccles. Age, eighteen months. 1. Second prize, Honble. Mrs. D. Astley, Melton Constable. Full age.

Class 38.—HAMBURGH (Silver-spangled).—Chicken of 1854.—2. First prize, Rev. T. L. Fellowes, Beighton Rectory. Age, under five months. 5. Second prize, Edward H. Strange, Amptill. Age, six months.

Class 39.—DISTINCT BREEDS.—For the best Cock and Hen.—5. First prize, G. W. Boothby, Holme Cottage, Louth, Lincolnshire. (Black Poland.) Age, five months. 16. First prize, Alfred Master, Norwich. (Jungle Fowl.) Aged. 7. Second prize, G. W. Boothby, Holme Cottage, Louth, Lincolnshire. (Buff Polands.) Age, five months. 14. Second prize, James Harding, Brazen Doors, Norwich. (Ptarmigan.) Age, seven months.

Class 40.—BANTAMS (Gold-laced).—10. First prize, James Monsey, Thorn Lane, Norwich. Age, ten months. 13. Second prize, Thomas Parly, Keswick. Aged. *Highly Commended*.—2. G. C. Adkins, Edgbaston. Age not known. *Commended*.—9. James Monsey, Thorn Lane, Norwich. Age, eighteen months.

Class 41.—BANTAMS (Silver-laced).—4. First prize, David Hume, Marton, near Middlesbrough-on-Tees. Age, twenty-one months, and twenty-three months. 6. Second prize, James Monsey, Thorn Lane, Norwich. Age, eighteen months. *Commended*.—3. W. Humphrey, Kerrison's Terrace, Norwich. (Silver-spangled.)

Class 42.—BANTAMS (White).—9. First prize, James Monsey, Thorn Lane, Norwich. Age, eighteen months. 5. Second prize, Frederick Pitt, Earham-road. Age, one year and nine months. *Highly Commended*.—2. G. C. Adkins, Edgbaston. Age not known.

Class 43.—BANTAMS (Black).—11. First prize, James King, Crook's Place, Norwich. Age, two years. 8. Second prize, Rev. Philip Gurdon, Cranworth Rectory, Shipdham. Aged. *Highly Commended*.—7. Samuel W. Corsbie, Heigham. Age, nine months. 12. James Monsey, Thorn Lane, Norwich. Age, eighteen months. *Commended*.—3. Rev. James Bulwer, Hunworth Rectory. Age, twenty months.

Class 44.—GEESB (Any colour).—3. First prize, Lord William Powlett, Downham Hall, Brandon. 5. Second prize, John Fairlie, Cheveley Park, Newmarket. Age, above one year. *Commended*.—1. F. L'Estrange Astley, Burgh Hall, Thetford. (Tyrolese.) Age, five months. 6. John Fairlie, Cheveley Park, Newmarket. Age, seven months.

Class 45.—DUCKS (White Aylesbury).—6. First prize, W. H. Green, Aylesbury, Age, seven months. 15. Second prize, W. Collett Reynolds, Great Yarmouth. *Commended*.—7. W. H. Green, Aylesbury. Age, seven months. 10. J. T. Mott, Barningham. Age, six months. 12. Charles Punchard, Blunt's Hall, Haverhill. Age, one year.

Class 46.—DUCKS (Rouen).—2. First prize, Rev. T. L. Fellowes, Beighton Rectory. Age, under four months. 3. Second prize, Charles Punchard, Blunt's Hall, Haverhill. Age, eight months. *Highly Commended*.—4. Charles Punchard, Blunt's Hall, Haverhill. Age, eight months.

Class 47.—DUCKS (Any other colour).—1. First prize, G. Botham, Wexham Court, Slough, Bucks. Age, hatched 1854. 4. Second prize, Rev. Edward A. Kittoe, Chadwell Rectory, Greys, Essex. (Buenos Ayrean.) Age, six months. *Commended*.—10. John Fairlie, Cheveley Park, Newmarket. (White Muscovy, Black Crests.) Age, seven months. 11. John Fairlie, Cheveley Park. (Grey Muscovy.) Age, above one year.

Class 48.—TURKEYS (Any colour).—Birds exceeding one year old.—1a. First prize, Abraham Cannell, Cringleford. Age, over a year. 8. Second prize, John Fairlie, Cheveley Park. Age, above one year. *Highly Commended*.—6. Mrs. Reeve, Snetterton Hall. Age, eighteen months. *Commended*.—7. John Fairlie, Cheveley Park. Age, above one year.

Class 49.—TURKEYS (Any colour).—Birds of 1854.—5. First prize, John Fairlie, Cheveley Park. Age, seven-and-a-half months. 6. Second prize, John Fairlie, Cheveley Park. Age, seven-and-a-half months. *Highly Commended*.—1. F. L'Estrange Astley, Burgh Hall, Thetford. Age, six months.

Class 50.—TURKEYS (Norfolk Breed).—0. First prize, Abraham Cannell, Cringleford. Aged. 2. Second prize, Rev. T. L. Fellowes, Beighton Rectory. Age, over one year. *Highly Commended*.—3. Mrs. John Henry Gurney, Catton Hall, Norwich. Age, twenty-nine-and-a-half weeks. 4. Mrs. John Henry Gurney, Catton Hall, Norwich. Aged.

Class 51.—GUINEA FOWLS.—Best pair of any colour.—1. First prize, W. R. Haggard, Bradenham Hall, Shipdham. Age, hatched June.

Class 52A.—PIGEONS.—CARRIERS.—6. Prize, George Master, London. (Black.) Aged.

Class 52B.—TUMBLERS.—1. Prize, G. C. Adkins, Edgbaston. Age not known.

Class 52C.—CROPPERS.—9. Prize, Alfred Thorpe, Carrow, Norwich. Age, one year. *Highly Commended*.—4. William Gilman, St. Giles'-street. Aged.

Class 52D.—BALDS, BEAROS, AND MOTTLED TUMBLERS.—1. Prize, G. C. Adkins, Edgbaston. (Balds.) Age not known.

Class 52E.—OWLS.—No prize.

Class 52F.—NUNS.—No prize.

Class 52G.—TURBITS.—2. Prize, Charles W. Burningham, 142, Edgeware Road, London.

Class 52H.—ARCHANGELS.—1. Prize, G. C. Adkins, Edgbaston. Age not known.

Class 52I.—JACOBINS.—1. Prize, G. C. Adkins, Edgbaston. Age not known.

Class 52K.—FANTAILS.—3. Prize, Edward H. Everard, Bury St. Edmund's.

Class 52L.—TRUMPETERS.—3. Prize, John Lees, St. Stephen's, Norwich. Age, two years.

Class 52M.—BARBES.—2. Prize, Charles R. Titterton, Snow Hill, Birmingham. Age not known.

Class 52N.—RUNTS.—1. Prize, G. C. Adkins, Edgbaston. Age not known.

Class 52O.—DRAGONS.—2. Prize, Chas. W. Burningham, 142, Edgeware Road, London.

Class 52P.—DISTINCT VARIETY.—5. Prize, Lord Sondes, Elmham Hall, Brunswicks.

COTTAGERS.—1. First prize, John Barnard, Stratton Strawless. (One cock and five pullets from Shanghae and Dorkings.) Age, six months. 3. Second prize, John Rix, Adelaide-street, Norwich. (Six Buff Shanghaes.) Age, seven months. 4. Third prize, James Cracknell, King-street, Cambridge.

SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.

THIS, the fourth Exhibition, was held in the Council Chamber, at Salisbury, on the 21st and 22nd instant. It was decidedly superior to its three predecessors, not only in the quality of the birds exhibited, but in the number of its visitors. We may add, that the addition of Mr. Andrews, of Dorchester, as a third judge, gave a powerful sanction to the correctness of the decisions. The two other judges were Mr. Hinxman, of Durnford House, and Mr. Higgs, of Southampton.

In *Spanish*, the old birds were a second rate and small class, but the chicken were very superior, and if Mr. Locke's continue to improve with age, they will take a first rank as adult birds, even if exhibited against more famed competitors.

The *Dorkings*, both coloured and white, both young and old, were good classes.

The *Buff Cochins* deserve the same remark; but the Partridge-coloured, and the White, were few in numbers, and deficient in merit. In the *Black Cochins* chicken class, Mr. Flight's pen was one of the best we ever saw. *Malays* were very moderate, but the *Game* classes, generally, were good. The *Spangled Hamburgs*, both Golden and Silver, were very superior, but the same character was not applicable to the Pencilled. They seem every year more weedy. The *Polands* were few in numbers, but much above the average in merit.

Now come we to the classes "Cross between any breed;" and we take this opportunity to express our conviction, that in most cases birds exhibited in these classes are not cross-breeds. We do not mean to express as our opinion that the exhibitors intend to make a false representation, but that they themselves have been deceived. It is not sufficient for securing a cross-breed that the hen should be coupled with a male of a separate breed, unless she has been separated from all other males for at least three weeks previously. There were fourteen pens of supposed cross-breeds exhibited on this occasion, and we doubt much if more than three of those pens contained really cross-bred fowls; and of those three there was but one pen holding out a prospect of benefit. We allude to Mr. Fookes's cross between the White Dorking and the White Cochins-China. There was an increased substance in the male bird, which otherwise maintained the characteristics of the Dorking, which may lead to a remedy of the White Dorking's great defect—a tendency to weediness.

Excepting the Silver-laced, which seem to get worse and worse everywhere, the *Bantams* were all good classes, as were the *Geese*, *Ducks*, and *Turkeys*.

The *Geese* taking the two prizes, weighed, respectively, 62 lbs., and 53 lbs., the pen of three.

Class 1.—SPANISH.—Birds exceeding one year old.—5. First prize, Mr. P. P. Cother, Salisbury. Age, three years. 3. Second prize, Mr. R. H. Hale, Salisbury. Age, eighteen months.

Class 2.—SPANISH.—Chicken of 1854.—10. First prize, Mr. Locke, Newport. Age, six months. 9. Second prize, Mr. Locke, Newport. Age, eight months. (This class highly commended.)

Class 3.—DORKING (Coloured).—Birds exceeding one year old.—17. First prize, Mrs. Finch Noyes, Laverstock. 19. Second prize, Mr. R. Fookes, Milton Brewery, near Blandford. Commended.—20. Mr. G. A. Ingram, Bagler, Milbourne St. Andrews. Age, eighteen months.

Class 4.—DORKING.—Chicken of 1854.—38. First prize, Mr. C. Smith, Durnford. Age, seven months. 53. Second prize, Mr. E. Pope, Great Tollar, Dorchester. Age, six months. Highly Commended.—26. Mr. J. J. Fox, Devizes. 34. Mr. Robert Loder, the Beeches, Crawley, Sussex. 43. Mr. E. Turner, Bishopstoke. Commended.—40. Mrs. Finch Noyes, Laverstock. Age, seven months.

Class 5.—DORKING (White).—Birds exceeding one year old.—60. First prize, Mr. W. Fookes, Tarrant Monkton, Blandford. Age, nineteen months. 60*. Second prize, Capt. Harris, Winton.

Class 6.—DORKING.—Chicken of 1854.—65. First prize, Mr. W. Fookes, Tarrant Monkton, Blandford. Age, seven months. 65*. Second prize, Capt. Harris, Winton.

Class 7.—COCHIN-CHINA (Cinnamon and Buff).—Birds exceeding one year old.—73. First prize, Mr. James Crane, jun., Tolpuddle, Dorset. Age, two years. 74. Second prize, Mr. James Crane, jun., Tolpuddle, Dorset. Age, between two and three years. Commended.—66. J. J. Farquharson, Esq., Langton House, Blandford. Age, eighteen months.

Class 8.—COCHIN-CHINA (Cinnamon and Buff).—Chicken of 1854.—81. First prize, Mr. J. Goodenough, Godmanstone. Age, eight months. 84. Second prize, Mrs. H. Fookes, Whitechurch, Blandford. Commended.—86. Mrs. W. F. Flight, Winchester.

Class 9.—COCHIN-CHINA (Brown and Partridge-feathered).—Birds exceeding one year old.—No award.

Class 10.—COCHIN-CHINA (Brown and Partridge-feathered).—Chicken of 1854.—No entry.

Class 11.—COCHIN-CHINA (White).—Birds exceeding one year old.—95. First prize, Mrs. Mills, Bisterne, Ringwood. (Second prize withheld.)

Class 12.—COCHIN-CHINA (White).—Chicken of 1854.—99. First prize, Mr. G. Chase, Turwick, near Petersfield. Age, six months. 98. Second prize, Mr. W. Cave, Hartley Row.

Class 13.—COCHIN-CHINA (Black).—Birds exceeding one year old.—No entry.

Class 14.—COCHIN-CHINA (Black).—Chicken of 1854.—107. First prize, Mr. Flight, Winchester. Age, five months. 106. Second prize, Mr. Woodcock, Fugglestone.

Class 15.—MALAY.—Birds exceeding one year old.—111. First prize, Mr. Dawkins, Salisbury. Age, two years. 115. Second prize, Mr. Woodcock, Fugglestone.

Class 16.—MALAY.—Chicken of 1854.—120. Second prize, Mr. G. T. Attwater, South Newton. Age, four months. 116. Second prize, Miss Lewis, Martyr Worthy, Winchester. Age, seven months.

Class 17.—GAME FOWL (White, Piles, Duckwings, and Greys).—Birds exceeding one year old.—121. First prize, Mr. T. P. Mew, Cowes. Age, twelve months. 126. Second prize, Mr. J. J. Ensor, Dorchester. Age, three years.

Class 18.—GAME FOWL (White, Piles, Duckwings, and Greys).—Chicken of 1854.—128. First prize, Mr. T. P. Mew, Cowes. Age, seven months. 131. Second prize, Mr. W. Burgess, Winterbourne Zelstone.

Class 19.—GAME FOWL (Black-breasted and other Reds).—Birds exceeding one year old.—140. First prize, Mr. J. Fletcher, Fovant. Age, eighteen months. 136. Second prize, Mr. J. J. Fox, Devizes. Commended.—138. Mr. H. F. Fisher, Blandford.

Class 20.—GAME FOWL (Black-breasted and other Reds).—Chicken of 1854.—146. First prize, Mr. J. Stratton, Bodenham. Age, cock, seven months, pullets, five months. 141. Second prize, Mr. T. P. Mew, Cowes. Age, eight months. Commended.—142. Mr. W. Burgess, Winterbourne Zelstone. Age, seven months.

Class 21.—GOLDEN-PENCILLED HAMBURGH.—Birds exceeding one year old.—152. First prize, Mr. R. Fookes, Milton Brewery, Blandford. Age, nineteen months. 151. Second prize, Mrs. Mills, Bisterne, Ringwood.

Class 22.—GOLDEN-PENCILLED HAMBURGH.—Chicken of 1854.—155. First prize, Mrs. Mills, Bisterne, Ringwood. 154. Second prize, Mr. T. P. Mew, Cowes, Isle of Wight. Age, seven months.

Class 23.—GOLDEN-SPANGLED HAMBURGH.—Birds exceeding one year old.—161. First prize, Mr. J. E. Pardy, Salisbury. Age, sixteen months. 159. Second prize, Mrs. H. T. Bower, Shroton House, Blandford.

Class 24.—GOLDEN-SPANGLED HAMBURGH.—Chicken of 1854.—164. First prize, Mrs. H. Fookes, Whitechurch, Blandford. 168. Second prize, Mr. H. F. Fisher, Blandford. Age, six months.

Class 25.—SILVER-PENCILLED HAMBURGH.—Birds exceeding one year old.—171. Second prize, Mr. T. P. Mew, Cowes, Isle of Wight. Age, twelve months. (First prize withheld.)

Class 26.—SILVER-PENCILLED HAMBURGH.—Chicken of 1854.—178. First prize, Mrs. Mills, Bisterne. 180. Second prize, Rev. O. A. Hodgson, Winchester.

Class 27.—SILVER-SPANGLED HAMBURGH.—Birds exceeding one year old.—184. First prize, Mr. H. F. Fisher, Blandford. 182. Second

prize, Mr. J. J. Fox, Devizes. *Commended*.—185. Mr. W. G. Chambers, Portsmouth. Age, two years.

Class 28.—**SILVER-SPANGLED HAMBURGH**.—Chicken of 1854.—190. First prize, Mr. H. Fookes, Whitechurch, Blandford. 192. Second prize, Mrs. Mills, Bisterne, Ringwood. *Commended*.—196. Mr. H. F. Fisher, Blandford. Age, six months. 199. Mr. E. Cusse, Winterbourne. Age, five months.

Class 29.—**POLAND FOWL** (Black, with White Crests).—Birds exceeding one year old.—200. First prize, Mr. T. P. Edwards, Lyndhurst. Aged. 203. Second prize, Mr. W. G. Chambers, Portsmouth. Age, three years.

Class 30.—**POLAND FOWL** (Black, with White Crests).—Chicken of 1854.—205. First prize, Mr. Edwards, Lyndhurst. Age, six months. (Second prize withheld.)

Class 31.—**POLAND FOWL** (Golden).—Birds exceeding one year old.—207. First prize, Mr. R. H. Bush, Littlefield House, Clifton. Age unknown. 208. Second prize, Mr. H. F. Fisher, Blandford.

Class 32.—**POLAND FOWL** (Golden).—Chicken of 1854.—210. First prize, Mrs. Mills, Bisterne. Age, seven months. 212. Second prize, Mr. R. H. Bush, Littlefield House, Clifton. Age, various.

Class 33.—**POLAND FOWL** (Silver).—Birds exceeding one year old.—214. First prize, Mr. Parkins Jones, Fulham. Age, two years. 217. Second prize, Mr. Edwards, Lyndhurst. Aged.

Class 34.—**POLAND FOWL** (Silver).—Chicken of 1854.—220. First prize, Mr. Parkins Jones, Fulham. Age, six months. 221. Second prize, Mr. W. Symonds, jun., Milbourne St. Andrews. Age, six months.

Class 35.—**CROSS BETWEEN ANY BREEDS**.—225. First prize, Mr. W. Fookes, Tarrant Monkton, Blandford. (White Dorking and White Cochins-China.) Age, eighteen months. 223. Second prize, Mr. J. Attwater, Hallingwood, near Cheltenham. (Malay and Dorking.) Age, sixteen months.

Class 36.—**CROSS BETWEEN ANY BREEDS**.—Chicken of 1854.—234. First prize, Mr. J. Fitcher, Fovant. (Game and Cochins-China.) Age, seven months. 236. Second prize, Mr. W. Taunton, Redlinch. (Game and Cochins-China.) Age, six months.

Class 37.—**BANTAMS** (Gold-laced).—242. First prize, Mr. J. Goodenough, Godmanstone. Age, cock, three years; hens, one year. 238. Second prize, Mr. James Crane, jun., Tolpuddle, Dorset. *Highly Commended*.—237. Mr. Jos. Goodenough, Godmanstone. Age, one year.

Class 38.—**BANTAMS** (Silver-laced).—248. Second prize, Mr. R. Loder, Crawley, Sussex. (First prize withdrawn.)

Class 39.—**BANTAMS** (White).—250. First prize, Mr. T. P. Mew, Cowes. 251. Second prize, Mr. T. P. Mew, Cowes. *Commended*.—253. Mr. Edwards, Lyndhurst. Age, hens, five months; cock, aged.

Class 40.—**BANTAMS** (Black).—258. First prize, Mr. T. P. Mew, Cowes. 259. Second prize, Mr. J. J. Fox, Devizes.

Class 41.—**BANTAMS** (Any other variety).—No award.

Class 42.—**GERSE**.—263. First prize, Mrs. H. Fookes, Whitechurch, Blandford. (Improved Somersets.) 264. Mr. Edwards, Lyndhurst. Aged. *Highly Commended*.—266. Mrs. C. Piegear, Rockbourne. (Swan breed.) (Whole class highly commended.)

Class 43.—**DUCKS** (White Aylesbury).—276. First prize, Mr. Edwards, Lyndhurst. Aged. 274. Second prize, Mrs. F. Noyes, Laverstock. Age, seven months.

Class 44.—**DUCKS** (Rouen).—283. First prize, Mr. H. Fookes, Whitechurch, Blandford. 285. Second prize, Mr. W. F. Flight, Winchester. Age, various.

Class 45.—**DUCKS** (Any other variety).—295. First prize, Mr. J. Hart, Fisherton-de-la-Mere. 290. Second prize, Mr. W. Hazel, Alderbury. Age, two years.

Class 46.—**TURKEYS**.—Birds exceeding one year old.—207. First prize, Miss Compton, Manor House, Lyndhurst. 302. Second prize, Mr. E. Cusse, Winterbourne. Age, eighteen months. (This class highly commended.)

Class 47.—**TURKEYS**.—Birds hatched in 1854.—313. First prize, Mr. J. Hart, Fisherton-de-la-Mere. 305. Second prize, Mr. Henry Bone, Avon, near Ringwood. (Norfolk breed.) (This class highly commended.)

Class 49.—**GUINEA FOWL**.—No entry.

Class 50.—**ANY OTHER DISTINCT BREED**.—327. First prize, Dr. Burney, Gosport. (Ptarmigans.) Age, fifteen months. 318. Second prize, Mrs. Mills, Bisterne, Ringwood. (Andalusians.) Age, two years. *Highly Commended*.—324. Mrs. Assheton Smith, Tedworth. (White Polands.)

Class 51.—339. First prize, Miss Bathurst, Clarendon Park. (China Silk.) Age, five months. 330. Second prize, Mr. W. Cave, Hartley Row, Fulham. (Brahma Pootra.)

QUERIES AND ANSWERS.

GARDENING.

LIST OF CINERARIAS AND CALCEOLARIAS.

"As I am thinking of growing a few *Cinerarias* and *Calceolarias*, and not being acquainted much with them, I should feel very much gratified by your giving me a short list of each of them.—SAM SLICK."

[The following twelve *Cinerarias* are good varieties, and may be had now at reasonable prices:—

ALBONI; white edged with lavender.

BLUE PERFECTION; rich dark blue.

CATHERINE HAYS; white and purple.

CHARLES DICKENS; large; purple-puce.

KING OF CRIMSON; rich crimson self.

MARIANNE; white and rosy-crimson; fine form

MR. SIDNEY HERBERT; shaded purple.

PRINCE ARTHUR; scarlet-crimson; large petal.

ROSY MORN; crimson and white.

SURPRISE; rosy-purple.

TYRIAN QUEEN; fine blue; excellent habit.

KATE KEARNEY; large; clear white.

The following six are new this autumn, and will be advertised shortly:—*Mrs. Gerard Leigh*, *Miss Bouverie*, *Lady Franklin*, *Mountain of Light*, *Magniflora*, and *Ne plus Ultra*.

CALCEOLARIAS are such ticklish plants to keep through winter, that we cannot advise you, unless you have a very good greenhouse, to buy any this autumn. The following are distinct good varieties:—

Baron Edon, Catherine Seaton, Duke of Grafton, Fire Ball, Golden Knight, Magnificent, Neapleso Prince, Princess Alice, Queen Victoria, Star, Surprise, and Voltigeur. These will cost 2s. 6d. each, if the dozen are taken. Those below are shrubby varieties, and grow and flower well in pots. *Coxiana*, very dark; *Gem*, crimson; *Superb*, dwarf crimson; *Kentish Hero*, orange-bronze spot; *Sultan*, fine dark crimson.]

FRUIT TREES FOR DERBYSHIRE.

"Having just built a new garden wall, I am anxious to plant it with the best fruit trees, and should feel much obliged by your informing me what kinds you recommend of the following: two Apricots, two Peaches, two Nectarines, one Plum, and one Pear for a south wall; two Pears and one Plum for a west wall.—C. E. H."

[Derby, although a middle county, is so hilly, in general, that we dare not recommend very tender kinds. We advise the following: *Apricots*.—One Shipley; one Moorpark. *Peaches*.—One Royal George; one Gallaude. *Nectarines*.—One Murray; one *Etruge*. The above, of course, on a south aspect. *Plum*.—One Greengage. *Pear*.—For South wall, one Winter Neils. *Pears*.—For west wall, one Louis Bonne of Jersey; one Benrre Diel.]

GROWING THE ZANTE VINE.—SOWING GLOXINIA SEED.

"I have three *Zante* Vines, a year old, five feet long, in 9-inch pots, which I intend training round trellis-work in my Vinery, to endeavour to fruit them. Can you instruct me?"

[We never grew the *Zante* Grapo; but, doubtless, it is amenable to the same law which regulates the pruning of other Vines. And what does such consist in? why simply in this:—prune as hard as you can, only leave enough of young shoots containing the best eyes, or buds, to produce as many bunches as your tree can nourish. It is here where the true skill is wanted, to estimate duly the probable degree of root-action, the medium such roots are in, and the amount of constitutional vigour the tree may rightfully be presumed to possess. But do you really think that you will have good fruit from your *Zante* this year? You had far better prune back to three or four eyes, with a view to really bearing wood in the ensuing year. As to pot-room, shift at once into a twelve-inch pot awhile before the growing period commences. Treat your *Gloxinias* as tender-annuals, sowing the seed in February.]

RED SPIDER ON FORCED VIOLETS.

"I have a quantity of the Tree Violets, in 32-size pots, now placed on a shelf in the greenhouse near the glass, but where they do not receive a very large portion of air; yet, on the same shelf, they have done before better than they would anywhere else. They have promised to do better this year than ever till Friday last; then, to my great surprise, I found all the foliage turned yellow. On examining them, I found that troublesome little pest, the Red Spider, had found his way amongst them. I directly soaked a quantity of tobacco, then removing all the worst-affected leaves,

sponged the remainder well with the liquor. Will you please to tell me if I have acted right towards them, and what further can be done?"

[Sponging, even with clean water, would have been good; tobacco-water, if not too strong, would be better; taking the pot and reversing it, and dusting the lower side of the leaves with flowers of sulphur would be better still. If you could place all the plants in a close box, and then introduce among them a tin saucepan, with water near the boiling-point, and smear the outside of the lid with flowers of sulphur made into a paint with water, that would be best of all; keeping the saucepan a little distance from the pots.]

HEATING A PIT AND GREENHOUSE.—GRAFTING CONIFERS.

"I have a pit twenty-four feet by six feet, the back seven, and the front five feet high, with three feet below the surface. Now, I want to turn this to a useful account, and my idea is this, to make a solid bed three feet six inches wide, enclosed in four-inch brickwork (which leaves two-and-a-half feet for path), the path to run at the back of the pit, say two feet high; on this solid bed to place some rubble for the return pipe to lay in, three inches for the pipe, and three inches for rubble, making two feet six inches to the bottom of bed; then, over the rubble to put a layer of turf and soil for bed, say eighteen inches, having one foot from the surface of bed to the glass. (But, before going any further, I must presume, that I have a three-inch pipe running the length of the pit, at one foot from the glass, and returning under the bed; the flow-pipe for surface-heat, and the return for bottom-heat).

"Now, I want to divide this pit; the one part to force some early flowers, with Cucumbers to succeed them; the other, to keep some greenhouse plants, and grow some Mushrooms; that is a puzzler, you will say, perhaps. But my idea is this, I have my return-pipe two feet six inches from the bottom, and if I put, say nine inches of Mushroom-bed over the pipes, I have nine inches left to put a platform over the bed, with glass to fasten next the path, thereby making the bed dark; then, over the platform to stand the greenhouse plants, as I think the surface-pipe will be sufficient for the plants, and the return for the Mushrooms; but how, if the bottom-heat is too much for the *Agarics*? My idea is, to have a plug to open from the return-pipe, thereby letting part of the heat into the house, if wanted; and should the bed be too hot, and the surface too cold, by inserting three flower-pots, with the bottoms out, in the bed, it will bring some heat from the bottom to the surface of the bed.

"Now, if you will kindly give me your opinion, I shall feel obliged.

And now to the question of boiler. I was thinking of having a square boiler, with one flow and one return pipe, with lid to fit; but on inquiry for such an article, in the large town of Liverpool (I might as well have remained at home, as I should have saved time), I was informed I could get one made for £5 10s., and nuts, screws, &c., and cost of mould, *extra*. I stepped a little farther, and I learned that a very respectable firm would put me up a saddle boiler, with pipes complete, for the low charge of £25, with no extra shillings or pence; but, as I have no inclination to see my employer taken in and done for, I wish you to give me a helping voice, by pointing out where such an article could be got. Now, my idea for a square boiler is this—my employer is desirous to use gas as a heating medium. I have no experience in the use of gas; but as he wishes to try it, I should like to give it a fair chance as an experiment; and I think a square bottom would present a better surface to the jet of gas than one with a concave bottom, as I do not think a saddle boiler could be heated with gas. In my last situation, I had a square boiler for a Pine-pit, twenty-four feet long by five feet wide, fixed midway of the pit, so that there was a flow and return pipe on each side, and one pit could be worked at a time, if necessary; and that boiler worked well; and as that is as simple as need be, I should like something of the same sort, without going to the needless expense of a costly apparatus.—PETER SIMPLE."

"P.S. In Mr. Appleby's list of Rockets, in the last monthly part, he makes no mention of the *Yellow Rocket*. I used to hear my father speak of it some twenty years ago. Is it extinct, or become rare? Could you inform me of the various

modes of striking the rare kinds of Conifers, or other modes of propagation, such as *Thuja lycopodiensis*, *Thinopsis borealis*, *Libocedrus Chilensis*, *Cephalotaxu Fortunei*, and other choice sorts. Will they graft or inarch?"

[1. You may be confirmed, as to the *idea* of making your pit or house, by observing what Mr. Fish has said and done on such a subject, in Vol. XI., p. 502, and onwards, or, if you possess not that volume, in No. 287, which you may as well consult before commencing operations.

2. One three-inch pipe for surface-heat, and one return for bottom-heat, will not do much for you either in forcing early flowers, or in procuring early Cucumbers. With such assistance alone, unless you kept your pipes very hot, you would have to wait for Cucumbers until June or July. You will see, in a space not much larger, that Mr. Fish uses two pipes for surface-heat, and two for bottom-heat. This we direct your attention to more particularly, as according to your proposed plan you will have no heat inside, except what the pipes will supply; and you say nothing of external heat in the way of linings.

3. One foot from the surface of the soil will not be sufficient for Cucumbers, unless you mean to shade and give air very freely in summer; from three to six inches more would be better.

4. To force plants early into bloom, to grow Cucumbers moderately early, will require more heat than will be agreeable for Mushrooms and greenhouse plants; and, therefore, though you can counteract the heat in the latter place, by abundance of air, it will yet be so much heating power lost. To save this, you would require the first compartment to be perfect in itself, with suitable valves, or stop-cocks, as lately referred to; but this will increase the expense of heating, and you will have to decide on incurring a first additional cost, or a waste of fuel afterwards.

5. There is nothing *puzzling* to us in combining Mushrooms with greenhouse plants. We have grown Mushrooms in almost every conceivable quarter, below greenhouse stages, on vinery floors, and we never failed, where we could get a suitable temperature, and not too much of it—about 55° being the most genial atmospheric temperature for them, with 10° or 15° higher in the mass of the bed, before the spawn has traversed it freely. There is some ingenuity in your proposed mode of getting rid of extra bottom-heat, for which we give you every praise; but if you use the same heat in this department, as in the forcing, or Cucumber-house, the neglect of these precautions might be fatal; and, in addition, there would require to be the means for sending moisture, at times, along the under-pipe, or, rather, pipes; and then, if you, by means of stop-cocks, or valves, heat each division separately, these precautions would be unnecessary. Your proposed plan would give you no more than some nine or ten inches head room for plants and pots together; and, therefore, beyond cuttings and small plants, you could do little with greenhouse plants. Besides, you say nothing of the watering; but for the sake of the Mushrooms, the drip from the pots above must be prevented, either by placing every pot in a saucer, or having a water-proof covering over the Mushroom-bed. The flap is of no consequence; as Mushrooms grow in the dark and in the light equally well.

6. Now for our idea on the matter. If twelve feet of these twenty-four were to be rigidly set aside for forcing purposes, we would have two three-inch pipes for surface-heat, and two for bottom-heat; and it would be as well to have the means of top-heat, or of bottom-heat separately, at will, by taking the flow pipe of each from a cistern furnished with plugs. If the other twelve feet have to be rigidly confined to greenhouse plants and Mushrooms, a flow and return would be sufficient. If at all likely that, ultimately, both divisions would be used for forcing, or growing Cucumbers or Melons, we would heat the whole twenty-four feet alike—two pipes for surface-heat, and two for bottom-heat, with socket joints at the divisions, with means of letting the heat off and on the second division at will, which, as already remarked, will increase the cost, and swallow up altogether above 100 feet in pipes. Were all to be used for a similar purpose, there would be no necessity for these sockets and stop-cocks. Meanwhile, keeping your proposed object in view, and throwing aside the consideration of how you heat the second division, we should manage the first much as you

propose; but in the second, in the meantime, for the accommodation of the Mushrooms, we would support the pipes on pillars, instead of on the bed; we would have no solid bed, and thus we would gain the two feet six inches in height which it occupies. On the floor of the pit, instead of on this raised bed, altogether below the bottom-heat pipe, or pipes, instead of above it, we would build our Mushroom bed; and we should be enabled to use more material, and to give it a covering with hay, &c., and the protection of a waterproof wrapper, without covering so high up as the pipe; and thus all the space above would be saved for the green house platform. We know, that with little trouble we could get immense Mushrooms by this mode; and then, when the place was to be used for forcing, if desired, it could be filled up with rubble, &c., like the other.

7. We attach but little importance to the form of a boiler; but whether for fire or for gas, we would almost prefer a concave round boiler to a square one. The setting is the great thing, and good bricklayers understand that well. We presume, that by a square boiler you mean one that sits, as it were, upon the bars, the top and sides being about square to each other. We know that such answer well; but, like other things which you must get made, they are expensive, as they are more difficult to cast; and if of wrought-iron, wholly or partially, that, too, will increase the cost. A Burbidge and Healy's boiler you would get, as advertised in these columns, for about £4, that would heat such a place well; and for a pound less, if you did not have the double pipes we recommend. If you had any idea of heating more, you would require a sixteen or eighteen-inch boiler, and that would cost a pound or thirty shillings more. If you calculate a little under a shilling per foot for the piping, you will have something like the prime-cost, and to it will be the addition of sockets and stop-cocks; and, as we all like to be paid for our labour, the expense of carriage, fittings, and fixing. If you can do the latter yourself, or by your men, the expense may not seem so much at first; but if everything is calculated, there will be no great saving eventually. We make it a point not to recommend tradesmen; but we think you will be able to come to a near conclusion what the job should cost. If you can place your furnace in the centre, instead of the end, as in your Pine-pit, the whole will be much simplified, and by means of stop-cocks, you can heat any division as you like.

8. What is called the *Yellow Rocket* is not so uncommon; but, then, many consider it to be no Rocket at all.

The *Conifers* you mention are all propagated by cuttings, grafting, and inarching; but all these modes are inferior to obtaining them from seeds, especially the two latter; but the subject will likely receive more attention.—R. F.]

TO CORRESPONDENTS.

WORK ON FRUIT-TREES (J. Wymask).—You will find full directions for the culture of all kinds of fruit-trees, as well as of every other kind of garden produce, in *THE COTTAGE GARDENER'S DICTIONARY*.

TAIL OF SHANGHAE COCK (A Subscriber).—The "green feathers" you speak of, we presume are black feathers, with that green metallic lustre upon them which are reckoned a point of beauty in the tail of a Buff Shanghae cock.

HOGG'S EDGING TILES (J. Morris).—You directed to Mr. Hogg quite correctly, and he is living there still. We know he had great difficulty in getting the tiles manufactured.

NAMES OF PLANTS (S. Y.).—Your *Ferns* are as follows:—No. 1. *Polystichum angulare* (*Aspidium* of some), a pretty, hardy, evergreen, indigenous Fern. Nos. 7 and 9. *Lastræa dilatatum*. Nos. 2, 8, and 11, appear to be various forms of the same. Nos. 6, 10, and 12. *Lastræa spinulosum*. No. 4. *Lastræa fenestricæ* of Watson; *L. recurva* of Newman. No. 3 appears to be from a small seedling plant in the way of *Lastræa cristatum*. No. 18. Unknown to us. No. 19, 20, 21, and 22, are certainly all the same, namely *Nephrodium molle*. No. 13. *Doodia caudata*, a pretty little greenhouse species. No. 17. *Gymnogramma sulphurea*, a very elegant species. Nos. 15 and 16. The same *Blechnum Australe*. No. 23. *Adiantum pubescens*. No. 5. Unknown to us.

CALENDAR FOR DECEMBER.

ORCHID HOUSE.

AREIDES, Saccolabium, and similar plants, keep moderately dry. **AIR:** excepting on very fine, bright, sunny mornings, when the heat

of the sun and the fire combined raise the temperature too high, no air will be required this month. **BLOCKS,** plants in, syringe when the sun is likely to shine. **BASKETS** with plants in, that are growing, dip in tepid water two or three times; those not growing dip only once. **BASKETS** (new), make to be ready when wanted. **COCKROACHS,** search for diligently, and destroy; lay poison for them; the best is candle ends crushed and mixed with arsenic—this is a sure destructive agent. **HEAT,** moderate, to induce rest; day, with sun, 70°; without, 65°; night, 55° to 60°. **INSECTS,** destroy diligently; one pair destroyed this month will prevent a numerous brood next year. **MOISTURE IN THE AIR,** supply to plants growing. **FOR GROWING PLANTS:** several will start this month; do this before new roots are formed. **PEAT,** procure; choose the most fibrous; the best is found in dry woods, where the Common Brake (*Pteris aquilina*) abounds; the roots of this Fern form the best fibrous peat. **STANHOPEAS,** in baskets, beginning to grow, put into fresh baskets with fresh peat; four inches deep is quite sufficient. **WATER** at the roots: apply only to growing plants, and that round the edges of the pots. **YOUNG SHOOTS,** look to, and keep the centre dry, or they will rot. T. APPELEY.

PLANT STOVE.

AIR, give on all favourable occasions. **ACHIMENES,** pot a batch to flower early. **AMARYLLIS,** pot a portion, and plunge in a moderate tan-pit to flower early. **BEGONIAS,** to bloom early, repot. **CLERODENDRUMS** beginning to grow, repot towards the end of the month; place in heat, and water moderately. **EAANTHEMUMS,** winter-flowering, water freely, and occasionally with liquid-manure. **FERNs,** repot small plants; reduce the water to old ones; cut down decaying fronds. **FRANCISCA,** pot a few, and place in heat, to flower early. **GARDENIAS,** pot a batch, wash every leaf, and place in dung heat, to start them to grow, and kill insects on them, especially the red spider, the great enemy of Gardenias. **GESNERAS** showing signs of growth, shake out of old soil, and pot in fresh compost; give little water and moderate heat till next month. **GLOXINIAS,** treat a few similarly. **HOYA BELLA,** a new and beautiful species, put in baskets, and train downwards. **IXORAS,** keep cool and moderately dry through the month. **LUCULIA GRATTISSIMA,** in flower, remove into a greenhouse, to prolong the bloom. **LYCOPONS,** divide and repot. **PASSIFLOA,** and other climbers, prune, and tie neatly in. **PLANTS TO FORCE,** such as *Azaleas*, *Persian Lilacs*, *Rhododendrons*, *Roses*, &c., place in a forcing-house, to bring them on to flower early. **ROGIERAS,** a genus of winter-blooming plants, should be now showing flowers. **SERICOGRAPHIS GREISBRIGHTIANA,** another addition to our winter-flowerers, repot, and water freely after the blooms are visible. **TAN-BEDS,** renew, to keep up a good heat through the winter. In every department of the stove let cleanliness prevail; clear the surface of the pots of moss and lichen; stir up the soil carefully, without injuring the roots; search diligently for insects; keep the walls and floors as dry and clean as possible; remove decaying leaves as soon as they occur; wash pots with plants in that have become green; and let neatness be the general order of the day throughout the month. T. APPELEY.

GREENHOUSE.

AIR, admit freely when the external temperature is above 35°, especially among hard-wooded plants not desired to have early in bloom. Those growing freely, or in bloom, should have an average temperature at night of 45°. A warm greenhouse should be seldom lower. **AZALEAS** for late blooming, keep cool; those swelling their buds not below 45°. **BULBS,** well-rooted in pots, place in gentle heat for early blooming; put funnels of paper over the *Hyacinths*, to cause the stems of the early ones to rise freely; keep mice from the successions; few things are better for this than chopped furze. **CALCEOLARIAS,** **CINEERIAS,** **CAMELIAS,** &c., attend to with heat and moisture, according to the time you desire them to be in bloom; the two first will require frequent fumigating. **CHEYSANTHEMUMS,** water freely with manure water. **CLIMBERS,** prune generally, to give light to the plants beneath them. **Passion-flowers** may be pruned back to within a bud of the main shoots. **Tecoma jussinioides** will bloom best on longish, strongish shoots; the smaller, therefore, should be cut out; after the strength is thus moderated, by these flowering profusely, it may be spurred back, like Passion-flowers. Train and elcan winter-flowering climbers, such as *Kennedya Maryatta*, and various *Tropæolums*, such as *tuberosum* and *pentaphyllum*; the latter, started in summer, will bloom all the winter, but the best for this purpose, in a warm greenhouse, is *Lobbianum*. **EARTH** in pots and borders keep fresh by stirring. **GERANIUMS,** encourage the forwardest, when early blooming is desirable, with plenty of air, and a medium temperature of 45°, giving them plenty of air, and tying them out. **Scarlets,** taken up from flower-beds, and kept in boxes and sheds, keep dry. Keep old *Calceolarias*, so raised, moist. **HEATHS,** keep cool, and give abundance of air in mild, clear weather. **HEAT,** by fires, apply when necessary; use a little covering in severe weather in preference to making the fires strong. **IXIAS,** **GLADIOLI,** and the hardier **LILIES,** pot and set in a cold pit, to be protected from frost. **INSECTS,** keep under, by fumigating and scrubbing. **LEAVES,** dirty, wash; decayed, remove. **MIGNONETTE,** take in a few pots now and then. **OXALIS,** give winter-blooming ones, such as *lobata*, plenty of light and water. **POINSETTIA PULCHERRIMA** will make a warm greenhouse now gay for several weeks. **PEIMULA** (Chinese), introduce: water with liquid-manure when it shows the flower-bud; the double-white give a favourable and warm position; as the flower stands well, when cut it is valuable for nosegays. **ROSES,** and other **SHRUBS,** introduce for forcing; commence at first with a top temperature of from 45° to 50°; if the bottom-heat is from 5° to 10° higher, all the better. **SALVIA APLENDENS,** supply liberally with water, and give it a warm corner. *Gesnera zebrina* will still be a good accompaniment where the average night temperature is 45°. *Salvia gesneriflora* will succeed *splendens* in the spring. **SUCCULENTS,** keep dry, and *Cactus* especially, except the *truncatus*, which will now be in bloom; give it a warm position, or the blooms will not open freely. The same may be said, as respects position, in the case of *Oranges* opening their bloom. **WATER** seldom; be regulated by temperature, evaporation, and the wants of the plants; when the flower-buds are swelling and opened,

give it oftener, and after breakfast, and with the liquid rather higher than the temperature of the house. TEMPERATURE, 45° during the day, 40° at night, with 5° to 10° more, at the warm end, or a conservatory, for placing tender and forced flowers when first introduced, allowing in each case a rise of 10° or 15° for sun heat. In severe weather, prefer covering, even during the day, to large fires; comparative darkness in a low temperature, for a short time, is preferable to light and a parched atmosphere. Young plants just potted-off, or in their cutting pots, suffer often at this season from two opposite causes. First, in the windows of sitting-rooms—the dry air exhausts them; and here, instead of soaking the roots, sponging and sprinkling the foliage is the preventive. In pits and frames without fire-heat, with all the air you can give, some will damp off. Avoid everything of a wet or fermenting material against the walls or boarding. Two or three inches of thick straw tied firmly against them will help to keep the inside both warm and dry.

R. FISH.

FORCING HOUSE.

Air, see *Ventilation*. ASPARAGUS, promote succession crops; bottom-heat 70°; plenty of air when up. APRICOTS see *Peach*. BOTTOM-HEAT, sustain generally about 72° to 76°. CUCUMBERS, top dress; apply liquid-manure and stop, and keep glass clean over head; air heat, 60° to 70°. CHERRIES, see *Peach*. COVERINGS, apply assiduously, so as to be able to give air frequently. FIRES, use discreetly, to repel frost, to sustain the proper temperature, and to be able to give air rather liberally. FIGS, see *Peach*. GLASS: wash all roofs. GRAPES, late fruit, fire freely in the day, with much air; avoid spilling water in house, and use the syringe once a-week thoroughly. INSECTS, extirpate, now is the time; do not forget the soft-soap, the sulphur, the sponge, and fumigation. KIDNEY-BEANS, pot in five-inch pots, four in a pot; the *Duns* and *Newington Wonder*; light, secure by all means; keep glass clean washed. MUSHROOMS, temperature, 50° to 55°; plenty of air moisture. NECTARINE and PEACH in blossom, keep at about 55° by day, at night about 40°; water very sparingly; shake branches gently, to distribute the pollen; stir earth around often. PINES, secure 60° to 70° to fruiters, with plenty of air; bottom-heat, 77° in dung-pits; keep hardy by plenty of air, and good linings; no water until the end of January. ROOTS, protect in all tubs, boxes, pots, &c. SEA-KALE, provide successions; bottom-heat 73°. STRAWBERRIES, introduce about the middle of December, earlier is not safe; begin at 50° in heat, and a bottom-heat 60°. TARRAGON, MINT, SORREL, MARJORAM, &c., introduce to bottom-heat. Let HEAT follow in a ratio to the light, at any period. VENTILATE as freely as you dare at all times. VINES, to force, begin at 50°; in blossom, maximum, 70°; keep air moist, and get a warmth in border of 75°; sulphur freely; remember the dreaded mildew. WATER, apply always in a tepid state.

R. ERRINGTON.

FLOWER-GARDEN.

ANEMONES, defend in bad weather; plant, if mild, for the last time till February. AURICULAS, defend in inclement weather. BULBS omitted, may be planted if the weather be mild (See November). CARNATIONS, defend in inclement weather. COMPOSTS, prepare. CROCUSES, take up and pot in lumps, to force in pots. Dig over borders, and dress all quarters generally. ENDIVES, trim. FIBROUS-ROOTED perennials and biennials, divide and plant. FLOWERS, (choice), defend generally from inclement weather. GRASS, roll occasionally, if winter be mild. GAUDEL, roll and keep orderly. HAWTHORN, gather berries and bury in sand, to sow next October. HENGEES, plant, and clip deciduous ones. HYACINTHS, defend in inclement weather. LEAVES, collect for compost. MULCH round the roots and stems of shrubs newly planted. PLANT shrubs of all kinds. POTTED PLANTS, protect in deep frames, &c.; place in hothouse for forcing. PRIVET, gather seeds of, and make young shoots into cuttings in bad weather; lay them in damp sand or soil, and set next February. PRUNE all shrubs requiring regulation. PRUNED ROSES, scrape bark, and wash with lime and soot. RANUNCULUSES, defend in bad weather; plant, if mild; seedlings of them require protection. STAKE shrubs newly planted, and any others requiring support. SUCKERS may be planted as removed during the winter dressing. TULIPS, defend in bad weather. TURF may be laid in open weather. UNCOVER protected plants, and, if not dry, place dry materials next them. WATER in glasses, change weekly; add a few grains of salt, or five drops of spirit of hartshorn. Buy all your TREES and SHRUBS forthwith, and put them in ground, preparatory for final planting in February. Think on the ICE-HEAP, and let leaves be gathered to cover it. See, also, that the ponds of water from which you get ice are freed from leaves and sticks, &c.

D. BEATON.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES, protect from severe frost; give air on every fine day; keep as dry as possible without flagging; remove decaying leaves, and stir the surface of the soil occasionally. CALCEOLARIAS: seedlings transplant; seed may yet be sown. CARNATIONS and PICOTEES, shelter from frost, snow, and heavy rains; give air to on fine days, even to pulling off the glass; in wet weather give air by propping up the light behind; water, if very dry; watch for slugs, and destroy them. CINERARIAS, protect from frost; repot seedlings. CHRYSANTHEMUMS, give occasional supplies of liquid-manure to, to bring out the later blossoms. DANLIAS, examine; cut off any decaying part to the quick; protect from frost. FUCHSIAS, cut off young wood, and keep the plant dry. HOLLYHOCKS may be planted in open weather; mulch with short litter; cuttings pot off, and seedlings transplant. HYACINTHS in beds, shelter from frost, by mulching. *Hyacinths in pots*, place a few in heat, to bloom early; in glasses, wash the roots in pure water, to cleanse off the green slime; give them fresh water in the glasses. TALL LOBELIAS, take up, pot, and pack away in a shed, till they make fresh plants. RANUNCULUS BEANS, prepare. TULIP BEDS, shelter from frost, heavy rains, and snow; finish planting, b. VERBENAS in frames, give abundance of air to; if mildew prevails, dust with sulphur; protect from

hard frost; water seldom, and only then when absolutely necessary; pick off decaying leaves. In this month FRESH SOILS may be procured; LEAVES collected; HEAPS of manures, lorm, and peat, frequently turn over to sweeten and pulverise.

T. APPLEBY.

ORCHARD.

ALMONDS, plant. APPLES (Espalier), prune, &c.; plant, &c. APRICOTS, plant. BRINE, apply with a scrubbing-brush to stems and branches of fruit-trees, to destroy insects, eggs, and moss. COMPOST, provide. CHERRIES (Wall and Espalier), prune and train; plant. CHESTNUTS, plant. CURRANTS, prune; plant. CUTTINGS of Gooseberries and Currants may be planted. ESPALIERS, prune and regulate. FIGS, protect from frost. FILBERTS, plant. FORK the surface around fruit-trees. FRUIT-ROOM, ventilate occasionally, and keep dark. GOOSEBERRIES, plant, prune. LAYERS, plant. LOAM and COMPOST, obtain. MEDLARS, plant. MULBERRIES, plant. MULCH, put around newly-planted trees. NAILS and SIRENS, draw and prepare in bad weather. NECTARINES, plant; prune and train in frosty weather. NAILING, proceed with in cold aspects. PEACHES (See *Nectarines*). PEARS, plant. PLANTING, in general, proceed with. PLUMS, plant; (Wall and Espalier), prune. PRUNING, attend to generally. QUINCES, plant. ROOT-PRUNE where necessary. RASPBERRIES, plant; prune. SERVICES, plant. SNAILS, destroy in their torpid state. STAKE and support trees newly planted. STANUARDS, remove dead and irregular branches from. STATIONS, make. SUCKERS, plant; remove from all fruits. TRAINING, proceed with. TRENCN and prepare horders, &c., for planting. THIN orchard trees. VINES, plant, prune, and train. WEATHER (bad), provide work for. WALNUTS, plant. WALL-TREES, generally, prune and regulate. WALLS; it is a very beneficial plan to paint these by means of a white-washer's brush, with a liquid mixture of 8 lbs. lime, 4 lbs. soot, and 6 lbs. sulphur. It destroys and banishes insects, as well as by its dark colour promoting warmth of the wall. The liquid employed, in which to mix the above, should be urine and soap-suds in equal proportions.

Any trees proposed to be regrafted in the spring may be headed down now, but the stumps of the branches should be left sufficiently long to permit a few inches more to be cut off at the time of grafting.

R. ERRINGTON.

KITCHEN-GARDEN.

ARTICHOKES, dress. ASPARAGUS-BEDS, dress, b.; plant to force; attend that in forcing. BEANS, plant a good main crop the first week in the month, if not done the last week in November. BEETS (Red), dig up and store, b. BORECOLES, full-grown, may be taken up with good balls of earth, and planted in any nook or corner, or plot of ground of less value, in open weather. BROCOLIS, treat the same, but lay in deeper, so as to earth-up the stems well; lay them in carefully, with their heads towards the north. Thus moving these vegetables gives an opportunity to prepare the quarters they occupied for other important crops; they are thus better enabled to stand the severe weather that may be expected, and, being closer together, they are much more convenient for protection. CABBAGES, plant; earth up. CARDOONS, earth up. CARROTS, store the main crops, if not done, and attend to those growing in frames, &c. CAULIFLOWERS, attend to airing in all favourable weather those in frames or under hand-glasses; remove all decayed leaves, and look after slugs. CELERY, earth-up, and protect when necessary. COLEWORTS, plant. COMPOSTS, prepare and turn over. CUCUMBERS, attend to those bearing; sow seed towards the end of the month for plants to plant out in the middle of January. DUNG, prepare for hotheds, EARTHING-UP attend to. ENNIVE, take up full-grown on a dry day, and plant deep and close together at the foot of walls, or other warm dry corners convenient for protection in severe weather. HOUSERANISH may be dealt with in the same way as directed for the Jerusalem Artichoke. HOTBEDS, attend to. JERUSALEM ARTICHOKES, give a good top-covering of any rough mulching or garden-refuse, so as to keep out frost, and to enable them to be taken up when required; yet it is well to have a few of the roots stored for fear of snow, or other rough weather, at the very time they are wanted. KIDNEY BEANS, force, c. LEAVES, fallen, collect together. LETTUCES, attend to those advancing in frames on a gentle heat; see that no drip falls into the hearts of the plants, and give all the air the weather will permit to such as are planted in frames for winter protection only. LIQUORICE, dig up. MINT, force. MUSHROOM-BEDS, make; attend to those in production. PARSNIPS, dig up and store, h. PEAS, sow in the open ground of the best early kinds, protecting them from frost, mice, slugs, and birds. PLANTS, to produce seed, attend to, b. POTATOES may be planted in light soils in open weather, and in hotheds towards the end of the month; examine often the in-door stores. RADISHES and SMALL SALANING, sow in frames, &c. RHUBARB, take up and pot off for forcing, or cover up with pots or tubs and fermenting materials. SEA-KALE, cover up with fermenting materials; fallen leaves are the best materials both for covering up the Sea-kale and Rhubarb. SPINACH, keep clear of weeds, and fallen and decayed leaves. TANSY, force. TARRAGON, force. TRENCH, drain, &c., vacant ground. WEEING, attend to. Be on the alert of a frosty-looking evening, and COVER UP a little earlier. TURNIPS; any quantity, according to the demand, may be taken up and stored, or packed up tidy in a corner, to be buried in coal-ashes, so as to be come-at-able when required. We always make it a rule, at this season of the year, to store in little or much, according to the appearance of the weather, a dozen or two of Celery, and Endive, Brocoli, or anything else that is likely to be required.

T. WEAVER.

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WEEKLY CALENDAR.

D M	D W	DECEMBER 5—11, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
5	Tu	Bombidium properans.	29.907—29.892	46—34	E.	01	51 a 7	50 a 3	4 a 15	15	9 12	339
6	W	Black-throated Diver comes.	30.060—29.930	45—36	N.E.	—	52	50	5 1	16	8 47	340
7	Th	Polyanthus flowers again.	30.099—30.088	44—28	N.E.	—	54	50	5 57	17	8 21	341
8	F	Skylarks flock.	30.236—30.164	43—29	N.	01	55	49	7 3	18	7 55	342
9	S	Red-throated Diver comes.	30.336—30.328	51—31	N.E.	02	56	49	8 12	19	7 29	343
10	SUN	2 SUNDAY IN ADVENT.	30.283—30.119	41—30	N.E.	—	57	49	9 22	20	7 1	344
11	M	Bombidium poccillum.	30.070—29.995	34—29	S.E.	—	53	49	10 34	21	6 34	345

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 46.8°, and 35.2°, respectively. The greatest heat, 60°, occurred on the 10th, in 1848; and the lowest cold, 14°, on the 6th, in 1844. During the period 97 days were fine, and on 92 rain fell.

POSTPONING the consideration of "Game Fowls" until our next, we will now confine our attention to what we consider the points of excellence in the various breeds of HAMBURGHS.

GOLDEN-PENCILLED.—*Plumage.*—*Cock's* hackle, back, and saddle, bright orange-red; breast, and under part of the body shades of light brown; tail ample, black, and well bronzed. *Hen*, regularly pencilled throughout on a yellow-bay ground—the hackle and under part of the body alone excepted, of which the former should be perfectly clear and of the same light yellow-bay; while the latter is of a still lighter shade.

Form.—The comb of the cock to be a full and firm rose, well-piked, and with the face and wattles bright crimson; ear-lobes white; legs clean and blue; carriage erect and symmetrical, the breast being carried prominently forward.

SILVER-PENCILLED.—*Plumage*, generally, as in the above, substituting a silvery-white for the yellow-bay of the hen, and the orange-red and brown tints of the cock, whose tail must be well-silvered, but by no means splashed with white; his lesser wing-coverts are also occasionally marked with yellow or chesnut.

Weight, it is true, does not enter into the consideration of Hamburg merits; but still the cock should not be less than 4½lbs, nor the hen than 3½lbs.

GOLDEN-SPANGLED.—*Plumage*, deep bay, frequently inclining to a brilliant copper. *Cock's* hackle and saddle to be preferred if spangled; but this is rarely seen, and they are then best striped with black longitudinally, the edge being clear. Red hackle and saddle very objectionable. Breast and back with well-defined, round spangles—the horse-shoe form being less effective; greater wing-coverts laced very heavily on the extremities, so as to form two parallel bars across the wing; tail black and ample. The more accurate spangling often seen in the hen-tailed cock, does not compensate for the defect in his plumage. *Hen*, spangled throughout, except the hackle, which, in its markings, resembles the cock's, and the lower part of the body, which is of a dusky black.

Form.—Comb, rose and very largely developed, as also the wattles, and with them and the face of an intense crimson; ear-lobe very full and white; general robustness of figure and bold carriage; legs blue and clean.

Weight, in excess of the pencilled birds, say not under 5lbs for the cock, or 4lbs for the hen.

SILVER-SPANGLD.—*Plumage*, generally, as in the above, substituting a silvery-white for the ground-colour; white also appears in the tail, though black should decidedly preponderate.

Form of somewhat slighter proportions than in the Gold-spangled.

BLACK.—*Plumage*, uniform glossy black; other features as before; size about those of the pencilled birds.

The *white ear-lobe* being so characteristic a feature in all the Hamburgs, becomes a most important feature for influencing the decision of the Judge.—W.

FRUIT-TREE PLANTING.

THE readers of this work will remember that I have, since the commencement of THE COTTAGE GARDENER, and, indeed, long before, advocated what I had taken the liberty of terming "platform planting." After an experience of many years, I not only see no reason to retract my views, as to this practice, but every reason both to continue and recommend it by all means in my power. I was first induced to adopt it as a stepping-stone to a dwarfing system in fruits; as I fully anticipated the public desire, in this respect, more than twenty years since. From that period, a few years after the cessation of the protracted war—when, in consequence of the enormous expansion in trade—villas and suburban gardens multiplied at an extraordinary rate near all our best towns, began in earnest what has been termed gardening for the million; or, in other words, a growing desire amongst the masses, to expand their taste, as well as to further gratify their palate.

But in proceeding with this practice, I, of course, could not but perceive that I had also in the "station" a most useful auxiliary against a bad subsoil. In the latter idea there is nothing which is new. I have seen old orchard Applo, and other fruit-trees, pulled up in this county—trees of nearly a century old—which had pavements of stone or other impervious material beneath them, evidently intended as a bar against a bad subsoil. The platform, or station, however, has a bearing of a more special character; it is not only a bar against the descent of the roots, but a great economiser of what gardeners term composts. Of course, it will take no pains to convince our readers that there is an infinite difference, as to expense, between making whole borders with the rich, turfy material of the paddock, and making stations; by the latter practice, the trees over a whole garden may be planted for less expense than the making of one border; this "border-making," however, is nearly at an end, unless for Vineries, where it will, in all probability, continue to be necessary.

I have always found six barrows of a sound loam sufficient for any fruit-tree, on any soil; indeed, in most cases, under a dwarfing system, half that quantity will suffice. Now, this is confined to the limits indicated

by the platform itself, and which, with me, is generally about five feet square, and is made of any hard or impervious material.

Now, the facility offered the root-pruner by this mode is obvious; it is seldom a tree requires root-pruning until it has been planted three years, and then the pruner may simply open a trench round the exterior of the platform, and cut away every root with his knife which extends beyond the stone boundary. Here, then, is a well defined line for him; to err is impossible; he cannot injure his tree at this distance; and if very severe operations are requisite, he had better at once take up the tree and replant it.

But I had nearly forgotten to name another consideration, which, with me, had a share in determining on the great superiority of the platform mode; and this was the connection of the "*stock question*" with fruit-culture. It is well known to most persons, that stocks have a considerable influence on the tree and its produce; and, as a maxim, it may, I think, be affirmed, that the less the stock is of a congeneric character, the lower will be the tone of the tree as to luxuriance alone. This is a fitting subject for enquiry; and I fear, to go into it fully, would be to overlay the remarks I wish to offer; and which should be practical rather than speculative. But I may here just observe, that there can be no doubt that the stock somewhat alters the character of the tree in other ways than mere luxuriance; and this, if true, offers great inducements to those who sigh for progress, to carry out experiments of this kind; for experiment it must be;—and patience, too, there must be: theory may suggest, but may not settle this question.

As to going far out of the way for strange stocks, I do not think that by any means commendable; the adoption of the *Mahaleb* stock for Cherries was an attempt of the kind, and I have never heard of success, worthy of notice, being attained by the practice. Indeed, the Cherry stock, or Merry-tree of the olden time, seems all that could be desired in this way; and for pot-culture, where less timber is requisite, and a multiplicity of fibres rather than big roots is required, it is by no means improbable, that seedlings from *Morello*, *Kentish*, or other small-wooded Cherries, would produce a stock by far more eligible than any *Mahaleb*, or, indeed, anything else "far-fetched and dearly bought."

To return to the platform mode, as connected with the "*stock-question*." I had felt assured, that by a greater simplicity in culture, giving the operator a ready and safe control over the roots at all times, much anxiety about "stocks" would be saved: indeed, in this I do claim much merit for the platform-question.

Having thus given a glimpse of fruit-culture, as concerns first principles, amongst which, I suppose, we may fairly place all operations connected with the soil, I will proceed to ground a little advice thereon, to those who are about making new fruit-gardens, or mending old ones.

Soil is, of course, a primary consideration; for although most of our hardy fruits will succeed tolerably well in most garden soils, yet, as the age we live in expects something more than a tolerable degree of success, we shall find that the old plan of "sticking trees in," without preparation, will not, in many cases, meet the requirements of the times. Now it is not a question of manure; were it so, we should find that the older our kitchen-gardens, the better our fruit-trees would thrive; such is by no means the case. Gardeners talk much about loams; and well they may, knowing, by experience, that a good loam will of itself grow almost any fruit-tree in the highest perfection of which it is capable. Our amateur friends, however, sometimes complain of the loose, and indefinite way in which gardeners are apt to handle the term "loam;" and it is scarcely to be wondered at. Hence, we find such expressions as "sound

loam, stiff loam, strong loam, elayey loam, rich loam, mellow loam, adhesive loam, light loam, sandy loam, &c.," a goodly array of titles, most assuredly.

This is serious enough to a beginner; and, for the sake of simplification, I may just observe, that in all this pother there need be no more than three terms used: these merely as to practical purposes. Such may be adhesive, or elayey loam; light, or sandy loam; and medium loam: these would express all that is needed; but no one can dictate a phraseology of the kind. There is a kind of conventionalism in these things, which comes and goes we know not how; but we need hardly add, "and care not wherefore." However, according to the old saying, "what can't be cured must be endured;" and I will, therefore, remind the unknowing in such matters, that these phrases, one and all, simply indicate the relation that sand (or, as I suppose our learned men would say, silica,) bears to elay; or, in scientific language, alumina.

A sandy loam should possess so little of tenacity, as scarcely to adhere in a wet state, even if squeezed. On the contrary, it may be averred that a elayey or adhesive loam will adhere, even when not wet, if squeezed in the slightest degree; and as to a medium loam, which is, in the main, the best for all horticultural purposes, the old criterion of the potting-bench is, perhaps, as good as any; it is this—take a handful, in a rather pulverised state, squeeze it between the hands, then let it fall to the floor from a height of about five feet; if it divides with much difficulty, it contains rather too much elay; if it break up into sundry particles, it is the much-to-be-desired medium loam; but, be it observed, the loam must not be wet for the experiment. Colour, however, is a consideration, though a collateral one; those loams are best which are nearly uniform in colour, and that colour a kind of hazel.

Thus much for soil; and now, how to economise it; for it is much too valuable to be squandered. The fruit-tree planter should examine the natural soil of his garden, and see to which it tends, whether to sand or clay. If to the former, he should try and procure a loam having a considerable elayey nature, and *vice versa*. It is not, as I before observed, in mere quantity we must ground our hopes; the texture is the first consideration; this it is, which, if well understood, and cleverly handled, enables a tree to equally withstand the rapid excitement consequent on a rainy season, with a minimum of light, and in one of extreme drought; as we are apt to say of mortals under the up-and-down trials of life—"neither elated by prosperity, nor dejected by adversity." R. ERRINGTON.

THE CRIMEA.

I AM not going to write about the war in the Crimea, nor about the transports, or supplies; but I have some news to communicate to the allies, to the friends, and to the relatives of our brave soldiers who are to winter in the Crimea. A wicked sinner, or a rank impostor, in the pay of Nick Nicholas, the Czar, has written a letter to the *Times* newspaper to say, that no one, except a Laplander, or an Esquimaux, could live out there in winter. This "lie circumstantial" is going the round of the press; and people, who do not know better, believe it, and are frightened at the fate of their countrymen in such a dreadful climate. A contemporary has already exposed the ignorance, or falsehood, of the fellow who thus wrote to the *Times*, by quotations from Pallas, a great Russian botanist; and from other sources within his knowledge, which go to show that nothing need be feared from a Crimean winter.

This is Mr. Pallas's somewhat poetic description:—

"The mildest and most fruitful region in all the—

Russian empire is that continuation of valleys arranged in a natural amphitheatre at the southern base of Taurida (the Crimea), along the coasts of the Black Sea. The climate is little different from that of Anatolia and Asia Minor; winter is hardly felt, the Primrose and the Crocus appear above the ground in the month of January, and the Oak retains its green foliage throughout the year. No part of Taurida, perhaps of the whole empire, affords the botanist a greater variety of plants, or the husbandman a richer harvest. The ever-verdant Laurel grows beside the Olive, the Pomegranate, the Fig, or the Dato tree, which might have been brought to the country in ancient times by Greek colonists. The manniferous Ash, the Mastich, the Sumach, the Bladder-nut, the Sage-leaved Cistus, the Emerus and the Arbutus of Asia Minor flourish in the open-air. The Walnut, and almost every kind of fruit-tree, thrives in the woods, or, rather, the natural gardens in the valleys. The Caper bush is scattered along the coast, the wild Vine reaches to the tops of the highest trees, descends again to the ground, and forms, with the Viburnum, festoons and garlands. High hills, masses of rocks, streams and cataracts, verdant fields and woods, and the sea that bounds the horizon, render the landscape equal to any imagined or described by poets. The simple life of the good Tartars, their cottages cut in the solid rock and concealed by the thick foliage of surrounding gardens, the flute of the shepherd, his flocks scattered on solitary hills, remind the stranger of the golden age. The traveller leaves the people with regret, and envies the destiny of mortals ignorant of war, the frauds of trade, and luxury accompanied with all its vices."

Botanists, from their acquaintance with the nature of plants, are, certainly, good judges on climate—witness the writings of Dr. Royle, Dr. Joseph Hooker, poor Mr. Gardiner, who died lately in Ceylon; and others of less note; but, for my part, I would take the experience of a good practical gardener, in any part of the world, as soon, if not sooner than the "deductions" of scientific reasoning from the animal or vegetable kingdoms; and I am happy to say, I have such experience from a thorough good gardener, who lived thirteen years in the Crimea—from 1838 to 1852.

When I was charging my memory, the other day, to get out the sharp points in my first attempts at gardening, I found a mine of good texts to write about for the next twelvemonths, and this is one of them.

The gardener, Mr. James Sinclair, was "boy" at Altyre, when I was a big man there,—a foreman in the plant department" of that famed establishment for plant novelties, for dancing nursemaids, and for spruce young gardeners. The Messrs. Knight and Perry, of the Exotic Nursery, King's Road, Chelsea, recommended my friend to Prince Woronzoff, and he went out with a large collection of different things to the Crimea, by sea to Constantinople, and hence across the Black Sea to Yalta, the finest place on the south coast of the Crimea, and not very far to the east of Balaklava. Here the prince has a splendid mansion, garden, hothouses, a deer park, and 3000 acres of vineyard; the name of the place is Marsanda; there is no place in England more aristocratic, nor half so grand in scenery. A great tract of the country here lies open to the morning sun over the Euxine, and is backed by ranges of lofty hills covered with wood to near their summits; straths, and glens, sheltered from the north and east winds, pasture vast herds of cattle as comfortable as in any part of Devonshire; and for "gentlemen's seats," we have nothing like it in England. With us, the great people scatter themselves all over the face of the country, but on the southern shores of the Crimea, the Russian nobles flock together in winter, to escape the severity of their northern climate; and here, in a delicious climate, they enjoy every luxury which money can command, except good servants

and intelligent labourers; but British servants, who, can resist the drunken habits of the place, do very well there. My friend turned tea-totaller the first season he was there; he had some military rank, which I forget, and was considered a great man by the natives. After his return we were a good deal together, both here and in London, and he was much amused at finding, after a lapse of twenty-six years, that physical geography was still my forte and favourite pursuit; and that of all places in the world, I knew least about the plants and climate of the Crimea. To make up for lost time, however, Mr. Sinclair opened my eyes and ears, and kept them on the stretch till he believed me just as capable of writing A COTTAGE GARDENER for the whole of the Crimea, as I was to write in this for home consumption. I should not like to say so much myself; but when the Allies take possession of the Crimea, and keep it for themselves, if a gardening calendar, or something in that way were wanted by the English part of the population out there, I think I could write it to be near enough to suit the first four or five miles inland, from Enpatoria to Kaffa, at least.

The open-air calendar of gardening for that, the south coast of the Crimea, with the exception of some few sowings in April, would suit, to a nicety, the whole south coast of England, from Cardigan to Harwich. If you place Eupatoria in Cardigan Bay; contract the Bristol Channel to the dimensions of the inlet before Sebastopol, and put Torquay at the head of the bay, to represent Inkerman; make the Land's End, Cape Khersonese, and the Isle of Wight, Balaklava, and so on, down to Harwich, which represents Kaffa; then add our south-coast climate to that of the Crimea, and we are not far short of the mark.

The winters are just as variable in the Crimea as they are in London or Edinburgh, but not so long. The summers are much warmer and longer than with us; the spring is earlier and the autumn is later there than here. Occasionally, but at long intervals, the frost is harder there than in England, by a few degrees, but does not last so long; for several winters, in succession, the snow never lies long on the coast, and the same kinds of plants do not require the same amount of protection in hard winters there as they do on the coast of Devonshire, because they ripen better by the hot summers in this part of the Crimea. The climate, however, is more relaxing than with us, and low bilious fevers creep on more and more, on our people, after the first few years; but my friend was seven years in the Crimea before he felt the effects of this climate; and, at last, he was reluctantly obliged to come home, to recruit his strength, "on leave of absence," with a promise to return, after a year or so, with new and improved breeds of plants and animals, and *may be* to plant vineyards on the shores of the Bosphorus, when the prince, his master, "occupied the seat of the Sultan in Stamboul;" but Menschikoff made a mess of it, and sent off my friend and fellow-labourer, before I wrote the calendar of operations for the gardens of the Crimea; but he is safe, and so will our soldiers be, for anything of a winter they may meet with there.

Common and Water Melons are sown there in April, in a hotbed, and by the end of May they are planted out in the open ground, where they ripen as well as in any part of Spain, or Portugal; Tomatoes, Capsicums, and Tobacco, every one grows and preserves from the open fields. Figs, Peaches, and Apricots ripen on open standards, and *the Vines are never stopped, or pinched, during the whole summer*. Not a knife, or hook, ever touched the Vines on thousands of acres of them along that coast, from Balaklava to Kaffa, for the last dozen years, at least; but they are well pruned in the winter. Tomatoes, Capsicums, Onions, Garlic, and Capers, are the favourite vegetables with the natives. The whiskey

they make from sour Grape Vines is sent to the Greek islands, and to Spain and Portugal, to strengthen the best wines of those places. All kinds of vegetables and small fruit grow there as well as with us; but, occasionally, many of them, and especially Currants and Gooseberries, fail, by a longer and more severe drought than we experience in England. In the fields, they grow Wheat and Barley, Oats, Rye, Indian corn, Buckwheat, Beans, Tobacco, and Flax; but I quite forget about Potatoes. Fuchsias and Scarlet Geraniums live out-of-doors there, with little or no protection, for six or seven years; then comes a harder winter which kills them outright. Oaks, Elms, Ashes, Poplars, Limes, Chestnuts, Beech, and *Pinus Maritima*, are the principal forest trees, from the sea shore to near the top of the rocky mountains, behind the farms and vineyards.

The soil in which the Vine does best there is very thin, and, to all appearance, poor, stony ground; requiring to be well shaded with the branches and leaves to yield a good crop, and that is one reason why they do not stop them in summer.

I had long arguments with Mr. Sinclair about the proper cultivation of the *Vine*, in different countries, soils, and aspects. He is well aware of the difference between our practice in England, and the theory of Vine culture; and the sum of our arguments amounts to this, that theory is wrong, if you practice it on English Vines; and our practice is wrong if applied to Vines in such places as the Crimea, where the summer is long enough, and hot enough, to make use of every leaf and twig, so to speak, which the plant produces. He thinks we keep the Vines too much under in summer, in this country, and not enough under in winter, judging from his own experience of them, both in and out-of-doors in the Crimea.

I did not inquire, particularly, how he managed, or would manage, Vines under glass; but in this country, we have two kinds of pruners of Vines, and both bring out the finest flavoured, and the best looking, berries in the world. What does our friend, Mr. Errington, think of letting a Vine run wild with all its laterals, and no stopping, until the crop was cut? All the leaves in a vineyard can no more be fully exposed to the full influence of the sun, as theory suggests, than in vineries under glass, and yet they do not only allow the Vines to run untouched all the summer, but insist on it as the right, and best plan in these warm vineyards.

I saw a large vinery, last year, where not one of the laterals had been stopped the whole season; but the principal bearers were stopped at three or four joints beyond the bunch; the crop was regular, but not heavy; the bunches were small, but the berries were good and well coloured. The gardener told me that he left the laterals untouched, in order to strengthen the roots for another season, as he called it. Was that a better plan, Mr. Errington, than to have stopped the laterals at a joint or two, and to have left more space for the larger leaves on the bearing shoots above the fruit, on the supposition that an equal quantity of leaf-surface was obtained by the two systems? This subject is still open to fair discussion by practised hands; and surely, that system which gives the best crops, and keeps the roots in full strength, must, in the long run, prove the best in or out-of-doors.

WINTER CUTTINGS IN THE OPEN AIR.

This subject has undergone a great change since I was a lad. I was first taught cuttings of hardy trees and bushes should be planted, or put in, through January and February; but then the practice was that of having one joint of the last year's wood to every cutting, as was taught by Miller, Abercrombie, and other authors; and few cuttings were put in as early as November, except Gooseberry and Currant cuttings. July

was then the month for putting in cuttings of all evergreens; and they, too, must either have a heel or a joint of last year's wood. From what I have since learnt, I do not believe that we have gained much by the change to plain cuttings of one summer's growth; and from planting evergreen cuttings later in the summer, and cuttings of deciduous plants in the autumn. We have, certainly, more deaths now than formerly, both in the nurseries and in private gardens. I recollect a kind of American Elm, which was blown down in 1822 or 1823, I forget which, but the spring was unusually early. This tree came into leaf all over, lying on the ground; and about three hundred cuttings were made from it; those from the trunk had a slice of the old bark taken with each cutting; the rest a joint of old wood; and most of them rooted that summer.

D. BEATON.

OLD TIMES, AND NEW MODES OF GROWING THE CHRYSANTHEMUM.

WHEN I was revolving in my own mind, the other day, for my autobiography, the things which were done and said about gardening, when I was driven into the garden, I began to wonder how very few discoveries have been made, in and about the garden, from that day to this. There was no hope for me then to begin to *learn by experience*, at twenty years of age, all that was necessary for a man to know to enable him to plant Cabbages, even if the ground was lined off for him; and so I was driven into books the very next day, to make up for lost time. To pay up the debt for the urgent and most valuable assistance which I received from books at the beginning of this journey, is the sole reason of my earnestness for improving our books and practice at the close of it.

Lest I should again forget to mention it, and regretting that I forgot it during my own practice, I shall first mention an ingenious experiment which I saw begun, under very favourable circumstances, in the summer of 1825, but the result has not yet been proved, although it might be proved in eighteen months. This experiment was tried on a new *Chrysanthemum*, and most of them were new at that day, in Edinburgh, and beyond it. However, all plants which were new and good were to be seen with Lady Gordou Cumming, at Altyre, sooner than anywhere else in those parts. She was fond of the sciences; a proficient in many branches of science herself; and her house and purse were always open to men of science, who were delighted to favour her, in return, with specimens and seeds from all parts of the world; and from China, among the rest. Her garden was an experimental garden, in a literal sense; and she was the ruling power, the guide, and experimentalist, in disguise. No one but her head-gardener, and one or two of the assistants, knew that every experiment was proposed, and the plan of carrying it out suggested, by Lady Cumming. Great people appear greater, when this trait in their character is understood. Lady Middleton proposed, suggested, and, with Sir William, settled before-hand, everything I did at Shrubland Park, and they gave me the credit of it, and wished the world to believe it due to me. How different from some *who would be great*; but I am not preaching a sermon, I was only going to mention the ingenious experiment which Lady Cumming wished her gardener, Mr. Temple, to try in the summer of 1825, but some family arrangement called him away from the north; and the first thing which his successor, Mr. McLean, from Lee's Nursery, did, was to upset all the experiments and plans of Mr. Temple; but he kept all the old garden hands till he learned to whistle the family tune, and he did well; but the ingenious experiment was for-

gotten from that day till one day last week, when it came into my head, no doubt, on good purpose. If I had thought of it sooner, and had proved it, as I think it will be by some one else, it would make me feel proud of myself, and I ought to be thankful that I forgot it till now.

The way Chrysanthemums were grown and flowered at Altyre, thirty years since, is now patronised by the Chrysanthemum Society of Stoke Newington, near London, for getting cut-blooms of the largest size. That way is to make cuttings of the best suckers on the old shoots, one or three in a small pot, some time in April, and to repot them as soon as they root; to get them out in front of a south wall early in June; to plunge the pots to the rim, and no more, in front of the wall, but not close to it, after the first fortnight; and never to stop them on any account whatever, but to encourage them, by liquid-manure, once or twice a week, from the day they were first plunged, not from the day they showed flower-buds,—as if they wished for dwarf plants, by turning them round and round to the sun from time to time, and by thinning the flower-buds as soon as the best-placed of them, and the largest in size, could be made out, and only leaving one, two, or three flowers to expand on one plant. By having three plants in a pot, without branches, and three flowers on each top, the long stems could easily be drawn together with a piece of matting, so as to appear as if they were but one head after all. Plants thus treated rise from three to six feet high, according to the size, and produce blooms of enormous size—much larger, indeed, than by any other method. The plan is not a bad one either for some parts of most of the large conservatories. It would be the best plan of growing Chrysanthemums to stand among the Rhododendrons and Camellias in the Crystal Palace, where you could only see the tops; but the style would never do where the pots and plants could all be seen at once.

Well, that was the plan—the single stem—at the period I am writing about. The plants were then placed among other tall plants, so as to hide the tallness of the stems, and to show the flowers only up among the tall plants; but we *forced* them. At the beginning of September the plants were housed, and a few of them were put into the stove; the extra length caused by forcing was considered no detriment then, and we had them “in” by the beginning of October. As soon as they were out of bloom, we did not turn them aside as we do now-a-days, but rather put them into the pine-stoves, on the side curbs, without cutting them down, except a little at the top with the dead flowers. The Chrysanthemum will stand the heat of the stove in winter, and seems to like it; the tall stems never seem to want cutting down—at least our's did not—and the suckers were pulled off as fast as they appeared, and cuttings were then made of the upper branches only; about the end of March they were removed to the greenhouse; and they were planted out with the Dahlias, in the borders, in May, where they soon made great, bushy plants, as tall as Salvias. Some kinds would flower well the following autumn; after that they were dug over as good-for-nothing.

About this time, it was rumoured that Chrysanthemums sported, both in China and in England; that is, that a branch, here and there, would, occasionally, give flowers of a different colour from the rest on the plant, and when cuttings were instantly made from the sporting branch, the new colour would follow and become permanent. Now, this curious disposition to sport was made the foundation of the ingenious experiment, which I want particularly to be settled next year, or the following year, at the farthest. The particular experiment was tried on a sport, but I should think any kind would do; at all events, the thing has not been proved either way.

The *rationale* of the plan was founded on the fact, that a bud from a variegated Jasmine, inserted into a green-leaved Jasmine, will cause all the green leaves to turn variegated also; even if the variegated bud should die before all the leaves tinged with the matter which caused the change. To follow up this idea on a plant of Chrysanthemum, which was known to be naturally disposed to change, or sport, five or six different kinds were grafted on one such plant in May, and on side-branches high up on an old stem which wintered in the stove; then, by thus compelling so many different kinds to circulate their juices in the body of a plant, already noted for a sporting character, it was *reasonably* expected that the chances of inducing a still farther change from the normal type, would be increased five or six fold, according to the number of different kinds grafted; but, as I have said already, the experiment was not completed, and the question remains open to this day, although I might have made a fortune by it long since.

It remains for me now only to point the experiment out to others, and in doing so, there is a second experiment which I wish to connect with it, and one which is as likely as not to be of still greater use to British gardeners; I mean, that an attempt should be made to cause the Chrysanthemum to seed with us as freely as the Dahlia; and why not? Our present plan of turning our plant into an annual, is one great cause why it does not seed with us, that cannot be gainsayed by anything we know of in physiology; a second cause of barrenness is, making cuttings from the suckers only. It stands to reason and science, if there is any difference between them, that the blood, or sap, in a sucker of any plant whatever, is of the same degree, say of manhood, as that in the branches in the upper parts of the same plant. There is not the smallest question about the very different degrees of strength, ripeness, development, or manhood, or whatever we choose to call it, in the sap of a limb, or branch, and the sap in a sucker fresh rising from the roots; then, if age, firmness of wood, or ripeness, and *infirmary* of constitution, by age, accident, or by the hand of man, are less inimical to fruitfulness, than youth, vigour, and bad blood, in the vegetable kingdom, we have the two to choose from, in the present system of propagating, and the mode of managing the Chrysanthemum, and in that which we followed in 1825. The inference is perfectly correct; but the result remains to be proved. I have not the smallest doubt, in my own mind, but the present heads of Chrysanthemums may be kept alive and in good health, to bloom every year, as long as I live, or as long as a Gooseberry-top; and I can conceive the possibility of some of these heads, at least, arriving at manhood, when they may be as prone to seed in England as they are at present to throw up watery suckers, with which we are content to raise gaudy flowers from, and thus leaving the chance of good seedlings to foreign gardeners, under a better climate. The French, “our allies,” were the first to find out the doubling propensity of Dahlias; and the Italians are now first on the list with *Pompon* Chrysanthemums at least; but who can say, that we, ourselves, will not excel them both, and all the rest of them, if we but go the right way about it.

Do, or not do, the load lay heavy upon me for the last ten days or so, and I could not sleep comfortably under it. New Chrysanthemums we must have, some way or other; new shades, and new shapes, and, as the old Roman said, “if you do not find a better way than mine, use it until you do.” Save a few of your choicest kinds, this winter, in the stove, or any where else, from the frost; remove the suckers as fast as they come; if the plants are three feet high, cut off one foot, and so on in proportion to other height; if there are many shoots, all the better;

thin them as they do Raspberry-stools; three of the strongest keep in an eight-inch pot, and only four in the eleven-inch size. I would not keep a larger size, and I would not disturb the roots for years, in case old roots, like old branches, may assist the plants to seed; but in the way to that stage, take the chances of a sport, by grafting as many different kinds, next May or June, as you can stick on. Should no sports appear for the first two years, nothing is lost; you have still two strings to your bow, the chance of sport, and the sure way of bringing all the grafts into a seedling age and condition. Two birds were never killed with so little shot and powder, and so good an aim.

But is there no easier way? I really think there is; but I am not certain of it. If we, or rather you, as I am out of it now, could get rid of the suckers altogether, it would be a real help in these experiments. I am firmly of opinion that all suckers can be got rid of by the process which keeps off suckers from Gooseberries and other bushes, which is, to get rid of the bottom eyes, or buds, when you make the cuttings. Therefore, if you understand the drift of the story, the best way will be to keep some plants with all the present shoots standing till next March, and then to thin them as I propose, and make your cuttings from the middle parts of the old stems, instead of from the suckers in the usual way; then, if you make the cuttings four or six inches long—they will root if you make them ever so long—then, with a deep cut above the eye, and another deep cut under it, you will get it out with all its roots, if it has any; if you do so with all the bottom eyes, and leave four or five, or even three eyes at the top to form a head, it strikes me you will never see another sucker on any of them. When they are rooted, potted off, and quite established, you must call them stocks, and the grafts will take to them all the better, at the proper time, that is, when the shoots are long enough and firm enough to take the grafts. I would not graft them very close to the main leader or trunk, so that a shoot or two of the stock may rise as well as the graft, to form a head. I would graft in the simple splice way, as they do the Larch, at Mr. Jackson's, which I mentioned the other day. I would bind the graft with worsted, and tie a little moss over it, then put it under a hand-glass till the grafts had taken. There are many who do not care a fig about experiments of this sort; yea, who think other people are half mad to think of such things; but everybody likes a nice-looking plant, and, therefore, everybody must graft six kinds of Chrysanthemums on one sort, for the look of the thing; for there never was such a nice way of seeing them before. D. BEATON.

A GOSSIP ABOUT SOME RECENTLY-INTRODUCED PLANTS.

CISSUS DISCOLOR.

WHATEVER may be said of variegated foliage being a sign, or concomitant of disease, there can be no question, that among the masses, beautiful variegated plants will ever be looked upon with admiration. We have frequently noticed that this plant, and the one immediately to follow it, have arrested whole companies of admirers, when fine specimens of other flowers were passed-by comparatively unnoticed. The flowers of this plant, like others of the same family, are not worth looking at. It makes the best appearance when encouraged to climb and hang from a fair-sized trellis, the supporting medium being wholly concealed by shoots and largish leaves; these latter having a beautiful crimson colour underneath, and splashed and spotted with white on the surface.

For this beautiful gem we are indebted to the Messrs.

Rollison; a firm, to whom is greatly owing the awakening of the taste for admiring and possessing variegated plants. I am not quite sure of the period of its introduction from Java. Its island habitat, however, is of mere importance than the day of its introduction. Although there are mountain ranges in Java, I am not aware that any of them are so lofty as greatly to influence the temperature of what is next to a sun vertical, tropical climate. Most of our readers will, therefore, be aware, that throughout the year, the day and night will not vary, at the greatest, more than an hour in length, and that the temperature also will be somewhat uniform, averaging about 80° of Fahrenheit. Unless for short intervals, it will thus be manifest, that this plant requires the temperature of a warm plant-stove to grow and obtain its greatest amount of beauty. This we can only expect to do in this country during the spring, summer, and autumn months; and during these seasons, when previously well grown, I have seen the plant remain quite healthy and beautiful, in a temperature ranging from 60° to 70°, and even a few degrees lower than the first-named figure. To maintain the plant in beautiful condition all through the winter, will require a temperature seldom below 70°; and even then, for want of sunlight, it is doubtful if its natural characteristics could be fully maintained. Like many other plants that become extremely pliant and flexible to our management, I have no doubt that this plant may be *kept* in winter, at a temperature of from 50° to 60°, but then it must be *risked*; comparatively little air given, and most, or the whole of the leaves, be expected to fall, and especially if the thermometer at all falls below 50°. So far as the future beauty of the plant is concerned, this deciduous state, or nearly so, in winter, is no disadvantage, as, when the sun gains strength in spring, the buds will begin to break under an increased temperature, when, in old-established plants, the young shoots should be pruned back, and, ere long, under the increasing light and augmented heat, the plant will again be covered with its striking foliage. I mention this, because many might be disposed to sacrifice the beauty of the plant in winter, if they could secure it in summer, without such an expenditure in fuel. Many things, comparatively tender, may be *kept* in a coolish greenhouse, rather dry, if placed, at the warmest end, under a hand-light that fitted rather close, and which was duly covered at night and cold mornings. When this plant is fairly growing, it will not be easy to give it too much heat and atmospheric moisture.

Propagation.—Short young shoots, two or three inches in length, strike easily in sand over well-drained peat and loam, in a pot, plunged in bottom-heat and covered with a bell-glass, the temperature being from 70° to 80°. But these stiff shoots are obtainable chiefly in spring, just after the plant has commenced fresh growth after being pruned. At other seasons, during the summer, it will be always easy to procure small, thin, long-jointed shoots, appearing almost like half shoot, half tendril appendages. Many have complained to me that they could not get on with striking this plant, the cuttings kept damping-off so; and I apprehend the difficulty arose from waiting too long, and using these puny, drawn shoots for the purpose. Now, there are several climbers that, just like this *Cissus*, are rather troublesome to strike, in the usual way, from such thin and drawn shoots; and yet they can be struck successfully by just departing a little out of the usual routine.

The best method to adopt with these small climbing, or dangling shoots, is as follows:—Take a piece of these shoots, with its growing point left untouched, and from six to twelve, or even eighteen inches in length. Cut across with a sharp knife at a joint, and remove the leaves there, and if the shoot is long, a few of the upper larger leaves also. Daub the base of the cutting into a

little charcoal-dust, and then let it lay a few minutes. Previously, according to the size of the cutting, a three or four-inch pot should have been prepared, filled to within an-inch-and-a-half of the top with drainage, and then with bruised charcoal, sand and peat, an inch, covered with sand a quarter-of-an-inch thick. This should then have been watered and allowed to settle, and get dryish on the surface. Have a few little pegs, or hooked sticks, ready; take the cutting, and do not dibble it in the sand in the usual way, but place its end horizontally close to the side of the pot, and just hardly covered with the sand. Lay the shoot round in volute fashion, on the sand, by the side of the pot, keeping it there by pegs, and leaving only the point free and at liberty; then place the pot inside of a larger one, with moss stuffed between them; and then get a bell-glass on the moss between the pots; water, and allow to dry before the glass is put on; plunge, then, in a good bottom-heat, shade from sunshine, and prevent damping by a little elevation on one side of the bell-glass at night; and these *unlikely* shoots of these and other climbing plants will furnish good, strong plants.

Soil.—When young, this should chiefly consist of fibry-peat, leaf-mould, and sand, with a little charcoal. As the plant increases in size, fibry-loam should be added, until it amounts to a third, and a little dried old cow-dung may be added to the leaf-mould, and this will cause the plant to be stubbier in habit than if grown in peat-earth almost alone.

Position.—This has already been indicated. It is next to impossible to give it too much of a moist heat. If forced by dung-heat, great care must be taken that no steam reaches it. A shady place suits it best, when making fresh growth at first, and more light to give the colouring to the leaves afterwards. A fair portion of water, heated to the temperature of the atmosphere of the house, or, rather, a few degrees higher, will be wanted when growing freely, and an atmosphere near the saturation point; but unless in extreme cases, such as to promote cleanliness, the syringe should seldom touch the foliage.

COLEUS BLUMEI.

This is, likewise, a plant, with beautiful foliage, from Java, introduced, I believe, by Mr. Low, of Clapton, and sent by him to the Royal Gardens, or, rather, the People's Gardens, at Kew; for right well do the people enjoy and appreciate the improvements, and the access to witness them, which have been effected there. This genus *Coleus* is something of an offshoot of, or near neighbour to, the genus *Plectranthus*; and, were my love for notoriety and conservative distinction much greater than is ever likely to come in my way, I would be apt to envy the gentleman whose name it bears. In our younger days, the coarse-growing *Plectranthus racemosus* used to be greatly grown in windows, its green foliage, and something-like-balm fragrance, making up for its roughness, and the long spikes of diminutive, greyish flowers. The flowers of this *Coleus Blumei* are rather better coloured, a bluish purple and white, and, in young plants, the spikes are of great length, though the individual flowers be small. But the foliage is the great attraction,—jagged, and of a yellowish-green at the sides, while the most of the leaf is rayed and splashed with a rich crimson-purple. Though from the same island as the *Cissus*, it seems to stand much rougher treatment during summer. As to propagating it, it is mere child's play. A few nice young shoots, a little firm at the bottom, placed round the sides of a pot, in sandy soil, and plunged in a briskish heat, in a shady place; and in a week they will be getting quite anxious to be potted off.

Such a sensation did the little gem create, that I could not resist the temptation to have it tried exten-

sively in windows and greenhouses, and reports were favourable from all places until the cold weather came, and now I get teased out of measure, as to how, in such places, the plants are to be kept healthy. I had a large plant, that stood in a cool glass veranda, in perfect health, from the middle of June to the end of October, though towards the last the leaves formed were very small. I have been vexed since, that this old plant was thrown to the rubbish-heap, as I could have better measured the cold it would have endured, than by younger plants. The appearance of the latter seem to say, that they will require a temperature from 50° to 60°, to keep them endurable, and 60°, and onwards, to keep the beauty of the foliage in perfection. As in the case of the *Cissus*, I am not yet sure that can be done in our dark winters; and allowing the plants to shed their largest and best leaves, under comparatively a lower temperature than it was used to at home, may both be the cheapest and best way of keeping it here.

A plant-stove, moderately heated, seems, however, to be indispensable in winter, though those who can place a small plant or two in a warm greenhouse, in a good position, and with the extra protection of a handlight, may succeed, if it does not get below 45° at night. Without this, I fear its admirers for a window or a greenhouse, in summer, must get cuttings in May or April, and strike them in their Cucumber-bed. It is not at all particular as to soil. It seemed to thrive in all kinds, provided it was moderately rich and open. It took in manure-waterings with great gusto, if not too fresh, nor too strong. A little shade is useful at first. Like the *Cissus*, when you wish it to grow fast, it can scarcely have too much heat and atmospheric moisture.

R. FISH.

BORONIA SERRULATA.

(THE SAW-EDGED-LEAVED BORONIA.)

THERE are few plants, whether in flower or out of flower, that are greater ornaments to the greenhouse than this plant, and yet it is not easy to cultivate without great and very judicious care. It will not bear rough and every day treatment. It will not thrive if the surface of the soil is allowed to become mossy, neither will it keep long in health if indiscriminately watered. It is one of my pet plants, which I very frequently see puny and pining, with yellow leaves, in the last stage of consumption; and this state, undoubtedly, is brought on by subjecting it to a wholesale method of management, such as answers only for such hardy fellows as the Hydrangea, the Coronilla, or the Myrtle; plants, that the worst management will hardly kill.

The Boronias are all Australian plants, and many of them are beautiful objects, especially *B. pinnata*; but the gem of the genus is the one I have selected to write about, chiefly for the reason that it requires a rather more careful treatment. Now, whoever loves plants will not begrudge a little extra trouble, with a few that require it, rather than allow them to live a year or two in ill health and finally die. Indeed, I think it is, or ought to be, a conscientious duty with every gardener, when his employer incurs the expense of purchasing good species of plants, to exert his utmost powers to grow them well, and bloom them satisfactorily, in order that the owners may enjoy them. Besides, his own gratification and credit ought to lead him to nurse his plants kindly. To begin (as the common saying is) at the beginning, the first thing is to procure the plant. If you have the opportunity of choosing the plant, and the time of adding it to your stores, choose a low, bushy plant, with dark green leaves, and let it come from the nursery about the end of April, or beginning of May would do. I would advise you to have a plant in a four-

and a half-inch pot, in which it had passed the winter. It will then be beginning to grow, and will require potting. Let it remain in the pot, after the journey, for a week or two, and in the mean time prepare the soil, crocks, and new pot for it.

Soil.—This plant thrives best in a compost, seven-eighths of which is nice, kind, fibry sandy-peat, pulled in pieces with the hand, and the other part, sandy-loam and leaf-mould, the whole well mixed, but not sifted. It will not thrive in heavy soil at all; neither will it keep a good colour in all peat. If the soil is too rich, it will grow well for a time, but will not flower freely, nor live long. Let this compost have silver-sand liberally mixed with it till it is quite of a sandy character, and let it be neither wet nor dry when used. This compost being properly prepared, and in good order, then break a sufficient quantity of potsherds into three sizes—a large one to cover the hole, a few larger to cover it with, and a larger quantity, about the size of Marrow Peas, to place on the large sizes. Lastly, take a new pot, two inches wider than the one it is in, and proportionately deeper; proceed to drain it by covering the hole; but take care the piece of pot does not fit the bottom quite close. I always prop it up on one side with a thin piece of slate or pot. Lay the second larger size upon it, till you cannot see it, and then a layer of the smaller. The whole will probably occupy an inch space, or rather more. Upon the last lay a covering of the rougher parts of the compost selected out for the purpose. Upon that scatter a little silver-sand, and, if such a thing is handy, a few small pieces of charcoal; this is, however, I consider, not indispensable. Then place as much of the compost as will raise the ball nearly level with the rim. The pot is then ready for the plant. Turn it out of the old pot, keeping the ball entire. Pick out the old drainage, and rub off gently the surface-soil down to the roots. Then place it in the new pot, and fill around the ball the fresh compost till the pot is quite full, pressing it down gently, as the operation of filling goes on, and, finally, give the pot two or three smart strokes on the bench to settle the soil, leaving a space of about half-an-inch to hold water, sufficient to wet the whole when it requires it.

Summer Management.—As soon as the potting is finished, place the plant, together with the *Acrophylum venosum*, in a house where a few degrees more of heat is given. If, however, there is no such convenience, then place such somewhat delicate plants at one end of the greenhouse, and keep the front windows close, giving air only at the back to let out the heat. The plants will grow well, though not so quickly as in a house of higher temperature. Like that plant (the *Acrophylum*) the *Boronia* will not keep in health where draughts of cold air are allowed to play through it. Keep it in the greenhouse all through the summer, only shade it from the sun from ten o'clock till four. Be careful with the water-pot; too much will be as injurious as too little. If the plants grow rapidly, and fill the pot with roots, then give a second shift in June, not later; and stop the shoots twice during the season, once in May, and again in July.

Winter Treatment.—Commence, in September, to gradually harden the plant to bear the change of the season, by lessening the quantity of water and lowering the temperature of the house; but always keep this plant, and such-like, from cold draughts. By this management, this beautiful plant may be grown to perfection.

Propagation.—I publish, as a fact, that this plant is easy to propagate. I have seen pots thickly set with cuttings, every one struck. The secret, if it is one, consists in choosing the right kinds of cuttings; they should be quite young, not too long; each cutting should have all the leaves, excepting three cut off with a very

sharp knife. The cutting-pot should be prepared in the way I have often described; that is, well drained, filled with the same soil in which the plants grow, with an inch of sand at the top; and then covered with a bell-glass, and placed in heat, and shaded from the sun. Shift the glass off as soon as the cuttings begin to grow, and pot them off in very tiny pots as soon as they have made roots, shading them again till they are established.

T. APPLEBY.

YOUNG GARDENERS.

(Continued from page 122.)

I AM very glad to find that my friends receive my remarks and advice in the best spirit, and such being the case, I am induced to continue these papers.

In my last, I directed their attention to acquiring some skill in the art of Drawing; and this week, according to my original division of the matter, Arithmetic, Geometry, and Land-surveying will occupy the Wednesday evening.

These arts and sciences are exceedingly useful to a gardener. Take the first to begin with. Procure any cheap work on the subject. A young gardener, whose name appears in this number, recommends Cassell's; and, as the price is within the means of any careful young lad, it may be as good as any, though I have not seen it. Arithmetic, or the science of numbers, is a very pleasing study, because it demonstrates the truth, and exercises the judgment and the memory. I need not insist upon its utility, for everybody allows it. A gardener cannot keep the account of the expenses of the garden, pay wages, and order seeds, without a knowledge of this most necessary and useful science. Study then, thoroughly, in the first place, the four elementary rules of Addition, Subtraction, Multiplication, and Division. With a thorough knowledge of these four rules, all the rest will be comparatively easy. The first thing to do, is to firmly fix in the memory the rules by which the sums are worked. If any one sum appears difficult, repeat the rule by which the sum, or sums, are to be worked, and by attending to the principles of the rule, the answer will certainly be found. Never despair; but try again and again, and the answer will come correct at last. Some minds are naturally quicker at this study than others, it is true; but the patient, persevering student will, in time, acquire the art of working Arithmetical questions, if not quickly, yet surely. The grand point is never to relax, unless from illness, the pursuit. Having set a time for this, or any other study, make it a point to constantly devote that time, and no other, to this branch of study.

When you are satisfied that you thoroughly understand Arithmetic, then procure a second-hand copy of Euclid, and commence the study of Geometry, which is the science of quantities and figures; without a knowledge of this, you will never be able to survey land, and draw correct maps; but having mastered the first difficulties, the rest will be easy. These two, Arithmetic and Geometry, are said to be the right and left hand of Mathematics.

Now, Geometry may be commenced before the whole of Arithmetic is gone through. I mean, give the three hours of one night to Geometry, and the two following Wednesday nights to Arithmetic; and when the latter is fairly mastered, then take in Land-surveying, as a third night's study; only mind this, do not take any other night in the week for these studies. Variety is not only pleasing, but useful. The mind is ever active, if kept in constant use; but if too much stretched and employed on one study, it becomes not only wearied, but absolutely weakened. By a change of studies, on the

contrary, it is relieved and strengthened, and seizes upon the new pursuit with vigour and avidity.

I have now fixed the studies for the third night in the week, and the next is Thursday. For this night, I would, by way of change, advise the study of Botany and Chemistry. The first is indispensable; and the latter scarcely less so, or, at all events, it is a very useful study. I mentioned that botanical works should be read and studied the first night in the week; but mere reading the books is not all; the plants themselves must be studied. There are many systems of Botany. The one easiest to be understood is that formed and published by Linnæus. It would take up too much space to describe fully the principles upon which that system is founded, but I may just mention that all the plants in existence, Linnæus has arranged in twenty-four classes; and the parts of fructification, or the parts that produce seeds, afford the rules by which each plant is placed in its proper class. Thus, if a plant has one anther and one pistil, it is placed in the first class and order Monandria (*mon*, one; and *andria*, a man); and Monogynia (*mon*, one; and *gynia*, a woman); termstaken from the Greek language; and all plants that have such parts, in such a number, are placed in that class and order; and the next class has two of these, and so on to the eleventh class; the remainder having some peculiar arrangement of these parts, the rules for which will be easily found in the books that treat on the subject. The best book in the English language to study this system is one published by the late Sir James Smith. This book should be had, if possible; and, also, a good Dictionary. THE COTTAGE GARDENERS' DICTIONARY is a very useful one, and only costs, ready bound, eight shillings and sixpence; but, if it can be afforded, the student should procure also Loudon's *Hortus Britannicus*; but the cost of that work, with all the supplements, is a guinea-and-a-half. When this system of Botany is thoroughly understood, and the student, by comparing every plant, is able to refer it to its place, and give it the right name, he may then procure Dr. Lindley's very excellent work, named *Introduction to the Natural System of Botany*. This study is a very delightful one, and will be a pleasing recreation from severer studies.

Chemistry must not be neglected; but as it is a higher study, the youth had better not attempt it till he has attained a knowledge of the sciences I have recommended already. Indeed, it had better not be entered upon before the young man is twenty years of age; although, if he has an opportunity of hearing lectures on the science, he should, by all means, embrace it. And if he has a chance to read any work on the subject, it will be well to take that opportunity also.

T. APPLEBY.

(To be continued.)

PECULIARITIES IN FRUIT-GROWING.

Few persons, who have travelled beyond the precincts of their own immediate neighbourhood, but must have noticed the different modes of performing many of the most common operations of every-day life; and it is not unusual to draw some inference, either good or bad, regarding the "new way" in which the operation is done. Unfortunately, it too frequently happens that the spirit of condemnation prevails over everything else, so that we too often see that all other places or methods are decried without the shadow of a trial. This is more especially the case with those whose education has been humble, and, probably, the disposition selfish. With them it is not unusual to condemn all other ways of thinking or acting, but their own.

On the other hand, there is sometimes a want of steady-

ness or stability in the individual who runs away after every novelty that presents itself, and condemns all that he had ever attempted before; whereas, he really has not had the patience and perseverance to test the novelty. This state of things is not confined to those who follow any particular pursuit, but is seen in all; and it would be difficult to say whether the prejudiced party, or the volatile one, is most to blame.

There are, and, we hope, a great many, who avoid both extremes, and look on things as they really deserve to be looked upon, and have sufficient discernment to see the faults or utility of any plan as soon as they become acquainted with its details; and have industry and enterprize enough to put it in practice, if they approve of it.

Now, we all know that gardening affords as many instances as any other calling of certain modes of performing the various operations being only known in the locality they take their origin from, and though, in some instances, certain peculiarities of the place may give rise to these features, the number of such cases are very few indeed; and we may infer, that their more general adoption is owing to other causes than their being unsuitable to the district. Now, amongst the peculiarities of treatment which many things in the gardening way receive, in different districts, that of *pruning the trees of smaller fruit* stands prominently forward, as being one in which practice differs widely; and it is only fair to say, that it has undergone some changes the last twenty years. Let us take, for instance, *Red Currants*, and we shall see, that some twenty years since the habit of cutting them in to short spurs or boughs was more common than it is now, since the defects of the plan have been so well known, which is this, that the fruit growing all together in such dense clusters, the individual berries have no chance to get sufficient sun and air to make them good, more especially those in the interior of the bunch, or tuft of bunches; even if they were as good, there is so much difficulty in gathering them without bruising, that the system is objectionable on that account alone; and for Currants that are expected to keep some time, it is obvious the plan is very much in fault. But there are many other features in small fruit growing and pruning, that have a sort of district notoriety, except so far as it may be, now and then, shaken by the innovation of some one more curious than his fellows, who attempts a different mode or way of acting. One of these cases came under my notice lately. It was in a district remarkable for producing large crops of small fruits; and the soil, I might observe, was dry, though, in texture, it could hardly be called "light," the subsoil being stony; and, in fact, the surface was well mixed with stones, both large and small as well. Drainage, here, was performed by that best of all agents "Nature," and grass, and cereals, and all light crops, suffered much in a dry, hot summer; however, I may add, that most fruits did remarkably well, and orchards of large extent abounded.

There was nothing decidedly striking in the peculiar mode in which they treated their trees in the pruning way, but they adopted the somewhat singular plan of heaping up a mound of earth around each plant; and as the ground generally consisted of a mixture of large Apple or Pear-trees, with Currants and Gooseberries, the whole being planted in rows of five or six feet apart, the same in the row; it is needless to say, that the respective mounds could not be very large, but they were generally cut up as high as the ground would allow of, consistent with its being dry all over at the proper time. Now, in describing this practice, it must not be confounded with that of planting fruit-trees on raised mounds, which some do in situations naturally wet or heavy; for I beg to observe, that the trees I mention were planted on the level ground, and their roots put in

the usual depth; but the earth was drawn up, or rather cast up against the collar, or stem of the tree afterwards; and the reasons for so doing seemed not altogether without some show of merit on its side, which the parties who adopt the plan seem to know tolerably well.

In the first place, we all know that ground turned up into ridges increases the amount of surface; and I believe that this principle is still further carried out when it is turned up into mounds, such as those I speak of. This is one very excellent reason for the plan; for no class of cultivators know the value of frequent stirring the soil better than the Kentish Hop and Fruit-growers; and although the former of these may carry the plan out more than the last, yet, as they are often seen in close contact with each other, the surface-soil of a well-managed fruit orchard is pretty often turned over, or moved in some direction; and if, as I have said, the increased amount of surface enables the ground to benefit in like proportion, it follows the plan is recommendable on that account.

Another, and, probably, a more tangible reason is, that the heaping of the earth around the collar of each plant necessarily removes the earth from the tips of the roots, which are thereby brought nearer to the surface, and will derive a corresponding benefit from the action of the sun and air around them. This is, perhaps, the most important of all the advantages which the plan presents, for the warmth and exhilarating effects of sunshine, even to roots, is of more consequence than many people are aware of; for they tend to ripen and improve the quality of the fruit, and, in the autumn, to hasten the growth and maturity of the wood.

Another, and not the least useful result, is in the support the earth gives to the plant; for how often do we see Gooseberry and Currant-trees hang on one side, to the great disfigurement of the tree, or plot in which it is placed. This is seldom or never the case where the stem is supported with a mass of earth as described; for, as with Cabbage-plants, the "earthing-up" tends to steady them.

Probably, some other benefits may accrue from it; and, no doubt, some parties will see, or imagine they see, certain defects or evils in it. Of the latter, I am unable to say more than that the general appearance of the trees so planted and managed was good; and that is always a partial proof of the utility of a plan. Nevertheless, there may be cases wherein it is not applicable; but I would earnestly advise some of our fruit-growing friends to give it a fair trial, and publish the result. Observe, the cases I speak of were those in which an open, stony soil was operated upon; such a soil, in fact, as I believe most of timber, and a good many fruit-trees, delight to grow in. I am inclined to think there are some merits in the plan; and the fact of its having been practised something like a century, or more, is assuredly a something in its favour.

R. ROBSON.

THE FEATHER-HEADED.

By the Authoress of "*My Flowers*."

No. 1.

WILL any of my readers understand me, when I talk of a person being *feather-headed*? Can they comprehend my meaning? I was greatly pleased, many years ago, with the expression of "canary-headed," used by a clever Scottish writer to describe a silly, vain woman; but I think feather-headed is still more expressive; and I am going to talk a little about a person who illustrates that term so fully, that if my readers do not know what it means now, they will before I have done.

Lydia Parsons was the daughter of very respectable parents; all her friends were respectable, and one of her brothers was connected with the country residence and

household of a nobleman. Lydia began life by a sad and wicked step. She became acquainted, some how or other, with a smart stage-coachman; it was in days when railways were unknown. Of course, it was a match her friends did not approve; but she chose to do her own way, as many a young woman has done before her; and the usual consequences ensued. She secretly kept up her intimacy with him, and when their plans were settled, he put her into his coach, and drove off with his worthless prize. They were married; and from subsequent knowledge of Lydia, I should imagine that both repented the day they first met. No man can ever respect or trust the woman who runs away with him. Let young women deeply consider this. The man who proposes the step, and the girl who consents to it, are neither of them trustworthy. How can either of them trust the other, when they have both begun matrimony with cunning and wilfulness, to say the best of it, if not of disobedience to parents, which is a breach of the Law of God? Lydia *had* parents, and, therefore, she committed a great and special sin.

The coachman was profligate and extravagant; Lydia, vain, thoughtless, and remarkably wanting in good sense and judgment. Without actually meaning to do wrong, she was always wrong-headed and silly in after-life, therefore, of course, she was the same in her youth. She had no *ballast*, as sailors say, and cockled about any how. She was a miserable wife; and when her wild and dissipated husband died, which he did young, she was a comfortless, helpless, sickly widow.

Having to support herself by her own means, Lydia now turned her thoughts to service, and obtained a situation as lady's maid in a family of a gentleman, whose age and failing sight required frequent assistance, both in sickness and health. He was obliged to be constantly read to, and his wife's personal attendant had a great deal of this duty to perform. Lydia, having had a better education than many of her class, was well fitted for this employment; but her health was so bad, and she wanted so much wailing upon herself, that she was of little use, beyond reading the Newspapers to her master, and gave a great deal of trouble in her turn. In consequence of this, her mistress was obliged to part with her, which she did with regret, because of her respectability, and the honesty of her conduct.

Lydia's next step in life was marrying again; and she set herself to inveigle a dirty, vulgar, common working-man into taking her for his wife. Except that he had a little bit of freehold, he was no better, but rather worse, than many labourers we see around us. Old, rude in manners, and low in feelings, the delicate, sickly lady's maid was not at all to his taste; but believing she had money, he had fancied it would be a good thing for himself, and they married. Nothing could persuade her, beforehand, that this old man had really nothing. His property was mortgaged, and he had not a penny to spend, but what he earned; this she was assured of by a resident gentleman, who knew his affairs, and regretted her bitter folly. But no; nothing would undeceive her, but her own bitter experience. When they began to find each other out, after the flutter of novelty had subsided, the unhappy truth stood before them. He had gained nothing, but a useless, ignorant, fine, half-genteel wife; and she had gained nothing but a violent, brutish, low-minded husband.

I would here beg every reader of the sisterhood to which I belong, to pause and meditate for a little while. Many young women, and elderly women too, may learn a deep and very useful lesson from Lydia's experience. I would impress upon them the necessity of cultivating *sober-mindedness*, so that in their passage through life, they may not go cockling about, first after this thing, and then after that; giddy, wrong-headed, wanting in sound judgment, and unfit for everything they undertake to do. I would entreat them to remark the two wild and headlong steps Lydia took. Her first marriage was for girlish love; the second for mature worldliness. Both were sinful, because she first disobeyed and cheated her parents; and, in both cases, she disobeyed the precepts of the Lord. Setting aside, for one moment, the Scriptural view of these things, what do such acts, in a worldly sense, bring forth? Do they ever turn out well and happy? We may make more worldly allowances for young and thoughtless girls; but are they any the happier for that?

Do they not bitterly repent of their mad folly, perhaps all the days of their lives? And even this pity cannot be given to those, who, in years of discretion, do foolishly. They have no excuse, except that "a deceived heart has turned them aside," and their sufferings must and will be severe. But when we turn the light of Scripture upon these actions, we see them in their full hideousness. We see the child breaking one of God's most solemn commands; and we see the woman taking a false oath before the face of the Almighty. "Shall not I visit for these things, saith the Lord?"

I must keep the conclusion of Lydia's tale for my next paper; or rather, I should say, the continuation of it; for her story is not yet concluded. But I shall have enough to say to deepen the lesson still. Let my readers remember, that Lydia was respectable; far from being, what is called by the world, unprincipled, and thinking, as many others, no doubt, think, that she was doing very wisely and very well. But she had no judgment; no sober-mindedness; all was empty folly and nothingness, and whichever way she went, she went wrong.

Dear readers! what are the very best, the very wisest of us all, without "the law and the testimony?" How needful that our ignorance and folly should be visited and bridled by the Word of God!

(To be continued.)

APIARIAN'S CALENDAR.—DECEMBER.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

PRESUMING that each hive intended to stand through the winter has been carefully examined, and found to contain about twenty pounds of honey in store, and that the stocks are all well protected against wet, they will require no further attention, at present, beyond occasionally cleaning the floor-boards, choosing a mild, bright day for the purpose.

VENTILATION.—I have never yet found that hives made entirely of straw require any ventilation whatever; indeed, I consider it better for them to have none; while those of wood or glass are in great danger of being destroyed without it, for in very cold weather, the vapour of the live condenses on the top and sides, and runs down upon the floor-board in such quantities, as to cause general dampness and mouldiness upon all the combs; when in this state, if timely assistance be not rendered, ruin very soon follows. A simple method of effecting ventilation is to place a feeding-pan upon the top of the box, the slider of the box being taken away. This pan may be left till March, when the box should again be closed.

HIVES.—This is a good time to get a supply of straw hives in readiness for the coming season, and to have them well covered with three coats of paint, stone or straw colour is the best; white, when the sun shines upon it, is too dazzling, and any dark colour absorbs too much heat.

SHALLOW HIVES.—I am more and more convinced, from experience, that Bees do much better in broad, shallow hives, than in any others. All the hives that I have used myself for the last three years, and those that I have had made for other persons for the last two, have been of this kind, namely, seven inches deep, and fourteen inches wide, measuring in the inside. The only inconvenience that can possibly arise from a hive of this shape is, that from the great weight of supers, which, year after year, it will have to bear, the top will sink a little; therefore, it should never be used without an adapting-board of twelve inches square; this will take the weight of the supers from the centre to the side of the hive; indeed, it would be better to let the adapting-board remain a fixture upon the hive, when once fastened down by the Bees, and should the corners at all interfere with the cover, where the milk-pan is used, they may be rounded off a little to the size of the hive.

NOTES FROM PARIS.—No. 4.

FRUITS AND FLOWERS.

The weather, in general, round Paris, has been more variable this year than usual, but the average of the whole

has so far been satisfactory. From about the first of January to the middle of February, we had a mixture of sunshine, rain, snow, and fog, but not much wind. From February to May we had bright sunshine nearly every day, with hardly a cloud to be seen, but the wind, such as it was, in the north. June came in with cold gusts and heavy showers, the latter being frequent till the end of July. Since then, with the exception of one or two stiff breezes from the south and south-west, the weather has been steady, mild, and warm. The first few days of November, however, were cold, dull, and damp, and a slight touch of frost was felt in the environs during the nights of the 27th and 28th of October.

At present, the approach of winter begins to be perceptible, especially at night and morning, but still the trees are not yet all denuded of their foliage, though we are near the middle of November. The Sycamore, Alder, Acacia, and one or two varieties of Elm, particularly the younger trees, would still afford a little shade, if such were needed. Many of the young trees are quite green. This circumstance may be accounted for, I think, by the absence of strong winds, more than anything else, as it forms the principal point of difference between Paris and London, with respect to climate.

There is, of course, also much more sunshine here, and it frequently continues without intermission, that is to say, without rain, or dull, cloudy weather, for several weeks together. Clear moonlight is general during the night. But heavy and long-continued showers have been the distinguishing features of the summer weather this year, not only round Paris, but in many of the provinces; and though the cereal crops have been abundant and good, the Vine, especially where grown on a large scale, has suffered considerably from too much wet, which though preventing, as some authorities here assert, the ravages of *Oidium Tuckeri*, has proved, in some cases, almost as bad as the disease. Potatoes have been but little infected this year, yet, whether owing to the soil or the sorts, they are not so good as could be desired, and they are rather dearer than usual. In general, though clean and sound, they are much too waxy and watery.

At present, vast quantities of Grapes, both Black and White, are in the markets, and have been for two or three weeks. They are usually in lots weighing about twenty-eight pounds, and such a lot may be had for sums varying from five to eight francs (4s. 2d. to 6s. 8d.). They are grown, for the most part, out-of-doors, in the vicinity of Paris, but the better sorts come from the adjacent departments towards the south, as the Loire, Marne, and Soane. In general, these Grapes are about the size of the *Sweet Waters* exhibited at Chiswick and Regent's Park, and when well ripened make an excellent dessert. Large quantities, I am told, are sent every year to London, and, indeed, the Parisians complain, if such a term may be used, that the English take all their best fruits and other garden produce. Some very superior samples may be seen, now and then, but these have been grown with more than ordinary care, under the advantages of shelter and artificial heat. Peaches have not been plentiful this year in the markets, but they have been good and large, at from two to three francs a dozen (1s. 8d. to 2s. 6d.). Apricots at from twenty to thirty sous (10d. to 1s. 3d.) a pound. The French pound is one or two ounces heavier than ours. Nectarines have been rather scarce, but Figs, Plums, Pears, and Apples, plentiful enough.

The fruit-dealers here, for the most part, deal in flowers in pots, and also in bouquets, but the poorer sorts merge into what we would call the greengrocer; only here the greengrocer takes a much wider field of action, and decks out his shop with all kinds of dairy produce, crockery ware, and kitchen utensils. With the exception of the pretty "American Lady," the Apples and Pears to be seen in the shops of the first dealers are remarkably large and well ripened, but I have no means, at present, of obtaining their real names. The *Duchesse d'Angouleme*, however, is not so difficult to recognise.

Of imported fruit, there is a plentiful supply of Spanish Oranges, the better samples of which are from three to four inches in diameter, and sell at about sixteen sous a piece (8d.). But that most in season now, as for one or two weeks past, is the Pomegranate, which is also supplied abundantly by Spain and Portugal. The best samples are

about five inches in diameter, and sell at sixteen sous a piece; but smaller fruit may be had, at from fifteen to twenty sous a dozen. The Pomegranate, from its singular structure, as well as its beautiful crimson berry-like seeds, which form, indeed, the only edible part of it, seldom fail to arrest attention, and it is a favourite model with artists who are fond of fruit painting. It is as plentiful here, at present, as the Pine-apple is in London during the autumn months. But I have not yet seen either Pines or Bananas.

The Parisian shopkeepers have a remarkable skill in showing off their goods; but those whose especial province it is to please the palate, would seem to understand, above all others, the art of captivating the eye. Let us glance, just for a few moments, into the window of a *Restaurateur*, such, for instance, as that of M. —, on the *Boulevard des Italiens*, and we see a picture that it would be difficult to surpass on canvass. First of all, is a miniature aquarium, with a fountain playing in the centre. Several gold fish are swimming about, and the border is studded with Ferns and Mosses. On every side, all round, and gradually rising to the height of about two feet at the circumference, are fancy baskets, and dishes of fruit, flowers, fowl, game, fish, vegetables, and confectionary, all arranged in the most tantalising manner, yet with remarkable skill, in point of artistic effect. Here, in front, are half-a-dozen of lobsters, that seem to hear the playing of the fountain, and would fain jump into the water, but they have only strength to indicate that life is still left. On the other side are some large salmon. To the right and left are some beautiful Grapes, Apples, and Pears, just as if brought from a banquet-table, after being only tasted. Further on is a noble buck, with one or two hares crouching among the brake, and these are set off with several prepared dishes of different colours. Then comes a basket of luscious Grapes, Pomegranates, or Oranges. At various points, near the salmon, are bunches of Asparagus, and dishes of Brussels Sprouts, Endive, and Cauliflower; then more Pears, Grapes, and Apples, interspersed with preserved fruits, such as young Figs, and *Reine Claude* Plum. Further on, at one side, are more Pomegranates; and on the other, a dish of Oranges. Yonder is a fine piece of beef, studded with parsley of the neatest curl, supported on the right and left by a couple of tender chicken. Then, as if to form the design of a curtain, a long string of moor fowl are suspended from the ceiling at both corners near the window. But all these are only the skeleton-work, so to speak. You should see how they are set off with preserved fruits, neat plants of *Erica hyemalis*, *Caffra*, *autumnalis*, and other late-flowering varieties; also several sorts of *Camellia*, as *alba* and *variegata*, together with neat, dwarf Orange-trees in fruit and flower. Nor must we forget the Ferns, which are extensively employed in this way by many of the principal shopkeepers.

Here, then, we have something that might task the skill of Lance, or any other famed painter, and which (not forgetting the lobsters) may be well called a living picture. But enough of it; for though we can admire a picture, we are not gourmands.

Passing from fruits to flowers and plants, I may first remark, that the Pomegranate (*Punica granatum*), is somewhat common here, as an ornamental shrub. Its pretty, red flowers, and general habit, make it a particular favourite with all who are fond of balcony, or window-gardening, but it is frequent in other situations, where large plants in boxes and pots are required. It makes a beautiful shrub at any season, on account of its small, clear, green foliage. It is somewhat hardy, but in keen frost, or cutting winds during winter, it is slightly sheltered. Along with the *Punica granatum*, I may notice *Habrothamnus fasciculatus*, which is grown in the garden of M. Bondoux, Rue Lourcine, as a standard in the open air, at least during six months out of the twelve. M. Bondoux has lived in the vicinity of London for about two years, and he states that the *Habrothamnus* is hardy enough to be treated in the same manner with us; but still, I think that is not quite certain, and many of your readers will be unwilling to admit such a statement. There can be no doubt, however, that if the *Habrothamnus* can be grown out-of-doors, and flowered as profusely in England as near Paris, it would be a valuable acquisition to the pleasure-ground, and the experiment ought, therefore, to be tried. But apart from the question, as to hardiness,

the mode of training it adopted by M. Bondoux is worthy of particular notice. The plants in his establishment, to the number of several dozens, have clean, straight stems, from four to seven feet in height, with heads of vigorous branches shooting out and hanging down regularly all round. They have every appearance of good health, and, when loaded with flowers, are remarkably beautiful. The standard fashion of growing ornamental plants has been successfully adopted with the *Viburnum tinus* (Laurustine), the *Laurus nobilis*, and others, adapted for large pots or boxes; the *Habrothamnus* evidently ought to be added to the list.

M. Bondoux has been successful in raising a new variety of this elegant plant, but what its characteristic features are I cannot say, as I have not seen it flower. From M. Bondoux's description, however, it would seem to differ but very little from the species, except in the colour of the flowers, the particular tint of which is said to be a beautiful mixture of crimson and carmine. This variety was sent out this year at fifteen francs a plant. Another variety, raised by M. Bondoux, called *Zephirene*, is to be sent out next spring.

The flower-markets, for some time, have been plentifully supplied with *Chrysanthemums*; and it is astonishing to see the neat, dwarf, dense bushes which the Parisians grow of this popular flower. Sometimes, to be sure, one may be deceived on this point, for several plants are made to assume the appearance of one. But still, single plants, not more than twelve inches high, and loaded with bloom, are not at all rare. We all know that essential point in the culture of this plant is to keep it full of leaves to the bottom of the stem. In this respect, *Chrysanthemums* are managed admirably here. But I shall probably have a little to say on this subject at a future time.

Among new varieties to be sent out next year, one or two good ones raised by M. Pelé, of the Foubourg St. Marcel, deserve a passing notice. They are, for the most part, about the size of Daisies, but as yet unnamed. No. 1 is a reddish-purple, tipped with sulphur-yellow; very regular, and well filled at the centre. No. 2 is clear rose near the circumference; the centre yellow, and very dense; the structure of this flower is somewhat singular. No. 3 is a lilac-rose, tipped with white. No. 4, a brilliant tint, between carmine and violet, tipped with gold or sulphur-yellow; the diameter of this is about two inches. These are very profuse bloomers, and, when well grown, must obtain a prominent place in every good collection.

M. Pelé is somewhat noted for his seedling *Chrysanthemums*, and he has a fine collection; but he was more successful last year than the present. He never sends out plants till they have been sufficiently proved; and though this year he has a vast number of good colours, the flowers are not compact and full at the centre; these will, therefore, be of no use. A dozen or two more varieties, not yet in the trade, may be seen here and there among the different growers.

Of *Dahlias*, many fine sorts have been introduced this year; but now, with the facilities of travelling and transit between London and Paris, it may be difficult to mention anything in this way which is not also to be seen in the English collections. I shall, therefore, only notice one or two which, it is probable, are not yet known with you. *Grand Sultan*, a superb Dahlia, deep violet, and clear lilac at the margins. *M. Schœnberg*, equally good, but not so large as the preceding; the petals are double, and of a beautiful deep rose colour. *Prince Murat*, a robust and magnificent flower, of a purple-rose colour. *Le Marechal Saint Arnaud*, brilliant scarlet. *Triomphe d'Essones*, clear cherry-red. *La Duchesse Eugénie*, salmon colour, shaded with rose. These are all of this year's introduction, and are as yet very rare here.

The open flower-markets are, at present, and have been for some time, freely supplied with Roses in pots, such as the *Quatres Saisons*, *Souvenir de Malmaison*, and others. The autumn and winter-flowering Heaths, too, are very abundant; and with *Veronica Andersonii*, which is a favourite here, they give a different feature to the bouquets, because of the spike arrangement of their flowers. Bouquets, just now, are for the most part made up as follows:—

Centre—*Camellia alba*, or *variegata*.

1st circle—*Heliotropes*.

2nd „ *Crimson Roses*, half open.

- 3rd circle White Heaths, in spikes.
- 4th " Red Pinks.
- 5th " Blue Violets (Neapolitan).
- 6th " Crimson Roses, in bud.
- 7th " White Heaths, as intermedium, or Bowiaua.

The Roses are slightly raised so as to balance the spikes of the Heaths, and they are always supported with one or two leaflets. Lilac Primroses sometimes take the place of Heliotropes, or Violets, and *Veronica Andersonii* is frequently used at the circumference; but it must be used sparingly, so as not to neutralise the effect of the Heaths.

Polianthus tuberosa (Italian tuberosc), is a very popular plant here, and several flowers are sometimes employed instead of Camellias or Dahlias, as the centre of a bouquet. *Echmea fulgens*, and one or two others of the same kind, are also selected for this purpose. Young Orange-trees, both in fruit and flower, are also much used in the decoration of shop-windows, and particularly salons and balcony-conservatories; but then they are as plentiful and as cheap here as Indian Azaleas are in England; and there are several nurseries in which they form the chief product. They are generally propagated by grafting, and they flower and fruit when but little more than twelve inches high. Neat plants, about twenty inches high, and with one or two large Oranges, may be had from thirty to forty sous, that is, from 1s. 3d. to 1s. 8d. It is no ordinary treat, at the present season, to see many thousands of these plants. They are propagated in pits, in the usual way; but bell-glasses are not much used, except for a few days after the grafts have been inserted. When fully established, they are potted off, and removed to a species of greenhouse sunk in the ground, and having a passage from one end to the other, just wide enough to admit of walking sideways.

Of other plants, in very common cultivation here for the flower-markets and shops, one or two may be mentioned. These are *Erythrina cristata*, *Leschenaultia formosa*, *Brugmansia suaveolens*, *Echeveria falcata*, *Gardenia Stanleyana*, *Myoporum parvifolium*. All these, and many more of the same kind, may be had on the Boulevards for ten sous and upwards; but, with the exception of *Echeveria* and *Myoporum*, they have now given place to the Camellia, winter Heaths, and forced Roses. But there is no lack of variety, for many of the autumn flowers are still in season; and we shall have Hyacinths and Jonquils in great profusion by-and-by.

P.S.—Before closing my dispatch I wish to thank Mr. Beaton for the handsome manner in which he has noticed my article on French bouquets; and, in accordance with his suggestion, I shall, on a future occasion, add a few particulars as to their construction.

November 14.—We have been somewhat surprised, this morning, by a fall of snow, which continued till about noon. It is, however, nearly all melted, and there has been a little sunshine.—P. F. KERR.*

GLOUCESTER POULTRY EXHIBITION.

This Exhibition of Poultry took place at Gloucester, on Wednesday and Thursday, the 22nd and 23rd of November, in conjunction with the Annual Agricultural Show, that has now been established for twenty-one years; as, however, the present was the first occasion on which the committee had offered premiums for the different varieties of Domestic Poultry, they very prudently entrusted the whole management to the Messrs. Jessop Brothers, of Cheltenham, and it gives us great pleasure to announce, that the arrangements were such as called forth encomiums from every visitor. System, order, quietude, and regularity, existed in every department, so that our mood of praise is richly deserved by the gentlemen who superintended this really onerous official duty. The fowls were well attended, the exhibition-room kept scrupulously clean, and was also tastefully adorned with laurels and other evergreens. The light was unusually good, being admitted through large skylights placed alternately along the whole of the roof: the building itself was a temporary structure, well-erected, and weather-proof, and placed near the Wellington Hotel, in close proximity to the

* The first fall of snow at Winchester occurred on the 22nd of November.—ED. C. G.

Railway Station, consequently, visitors were, on their arrival, almost at the very doors of the exhibition; and many thus took advantage of remaining spectators till within a few minutes of the departure of their respective trains. The attendance was very good; the attraction of poultry, as an additional feature to the general agricultural display, was manifest, from the greatly increased numbers of visitors, particularly ladies. The scale of prizes being liberal, most of our highly reputed breeders competed, and, consequently, birds of first-rate character abounded in the generality of the classes. We shall now proceed with a short summary, and then add the list of prizes, from which the reader himself may easily apprehend the competition was far closer than is usual on such occasions.

The *Grey Dorkings*, both old and young, were very excellent; indeed, in the class for chicken, the competition was so extreme, that many fowls, here only "highly commended," would have been successful in taking first prizes at most local exhibitions. The *Spanish* fowls, too, were most excellent: the first prize pen, belonging to Mrs. Lydia Stowe, of Bredon, contained one of the most purely white-faced Spanish cocks we have seen for some time; this pen attracted much attention among the numerous visitors. The *Cochins* also presented many strong evidences of careful breeding; the successful pen of chicken, belonging to Mrs. Herbert, of Powick, were, undoubtedly, the very best pen of "dark Cinnamons," that have yet publicly competed; and, from their peculiarly excellent condition and conformation, easily wrested the laurels from their "buff-coloured" rivals. There were several pens of good White Cochins, but by no means equal to some that have been exhibited in the neighbourhood during the past years. In the Partridge-coloured variety, those of Captain Snell, and the Rev. Granville Hodson, far exceeded their rivals, they were much admired, and will, doubtless, tend considerably to raise this really beautiful, though somewhat neglected, variety, in public estimation. The *Game* classes were, however, perhaps, the very gems of the exhibition; most of the birds were exceedingly well-matched, and pen after pen closely pressed on the honours of the successful ones. Scarcely a single coop was exhibited in this class that were not in the highest possible condition. The *Hamburgs* were indifferent; but there were several excellent pens of *Polands*, both white, black, golden, and silver. The extra class did not produce any hitherto unknown variety; the prize pen of *Indian Game* were, however, especially superior, and much noticed by the company assembled. Many of the *Bantams* were very good, but in bad condition, from moulting; the *Sebrights*, however, did not fail to draw groups of admirers during the whole time the exhibition was open to the public.

Almost every pen of *Turkeys* was excellent; and the first prize pen (birds of 1854), of the Cambridgeshire breed, were most especially deserving of notice, as being of unusual size, and perfection in colour and general appearance. The *Geese*, *Aylesbury Ducks*, and the *Labradors*, were well represented; and among the Ducks were to be found birds of a great weight; they were, consequently, a generally approved class. We feel great pleasure in congratulating the committee on the success of their undertaking; and, also, on the careful attention paid to the poultry during their confinement.

The judges were E. Hewitt, Esq., of Birmingham, and another gentleman.

Class 1.—*DORKING*.—Cock and two Hens, hatched before 1854.—6. First prize, R. Branwell, Holsworthy, Devon. Age, one hen hatched 1853, others not known. 4. Second prize, Miss Steele Perkins, Sutton Coldfield, Birmingham. Age, cock about one-and-a-half years, hens one year and five months. 10. Third prize, John Thompson, Woolvers, Reigate, Surrey. Age, hatched 1853. *Highly Commended*.—7. Charles Edwards, Brislington, Bristol. Age, over one year. 9. John Thompson, Woolvers, Reigate, Surrey. Age, hatched 1853. *Commended*.—3. Col. Clowes, Froxmer Court, Worcester. Age, cock one year five months and three weeks, hens one year five months and one week.

Class 2.—*DORKING*.—Cockerel and two Pullets, hatched in 1854.—17. First prize, George McCann, Graham House, Malvern. Age, eight months. 14. Second prize, Colonel Clowes, Froxmer Court, Worcester. Age, cockerel ten months, pullets seven months. 16. Third prize, R. Branwell, Holsworthy, Devon. Age, cockerel hatched the 17th April, pullets 17th February, 1854. *Highly Commended*.—18. G. McCann, Graham House, Malvern. Age, about eight months. 19. Rev. Henry G. Baily, Swindon, Wilts. Age, eight months. *Commended*.—15. Thomas Morris, Maisemore, near Gloucester. Age, cockerel thirty-two weeks, pullets twenty-two weeks.

Class 3.—*SPANISH*.—Cock and two Hens, hatched before 1854.—27.

First prize, Mrs. Lydia C. Stow, Bredon, Tewkesbury. Age, seventeen months. 25. Second prize, William Plummer, Brislington, near Bristol. Age, upwards of a year. 24. Third prize, Charles Thos. Nelson, The Lozells, near Birmingham. Age, cock seventeen months, hens two years each. *Commended*.—26. Rd. Branwell, Holsworthy, Devon. Age, cock 15th May, 1853, hens May, 1853.

Class 4.—SPANISH.—Cockerel and two Pullets, hatched in 1854.—31. First prize, Daniel Parsley, Rook Cottage, Stapleton Road, Bristol. Age, May 20th, 1854. 33. Second prize, W. Plummer, Brislington, near Bristol. Age, 2nd March, 1854. 35. Third prize, Charles Edwards, Brislington, near Bristol. Age, cockerel March, 1854, pullets May, 1854.

Class 5.—COCHIN-CHINA (Cinnamon and Buff).—Cock and two Hens, hatched before 1854.—39. First prize, Rev. D. Capper, Huntley Rectory, near Newnham. Age, two years. (The only birds shown in this class.)

Class 6.—COCHIN-CHINA (Cinnamon and Buff).—Cockerel and two Pullets, hatched in 1854.—42. First prize, Mrs. S. R. Herbert, Powick, Worcester. Age, eight months. 55. Second prize, John Taylor, jun., Spring Grove, Hounslow. Age, ten months. 41. Third prize, Mrs. S. R. Herbert, Powick, Worcester. Age, seven months. *Commended*.—53. Captain W. H. Snell, St. Swithin's Lane, London. Age, seven-and-a-half months.

Class 7.—COCHIN-CHINA (White).—Cock and two Hens, hatched before 1854.—59. First prize, Mrs. S. R. Herbert, Powick, Worcester. Age, cock two years and five months, hen two-and-a-half years, second hen eighteen months. (The only birds shown in this class.)

Class 8.—COCHIN-CHINA (White).—Cockerel and two Pullets, hatched in 1854.—64. First prize, Mrs. S. R. Herbert, Powick, Worcester. Age, cockerel seven months, pullets six months. 61. Second prize, James Turner, Northbrook, Exeter. Age, eight months. 62. Third prize, James Turner, Northbrook, Exeter. Age, cockerel nine months, pullets eight months. *Highly Commended*.—63. Mrs. S. R. Herbert, Powick, Worcester. Age, cockerel eight months, pullets seven months. (A meritorious class.)

Class 9.—COCHIN-CHINA (Other varieties).—Cock and two Hens, hatched before 1854.—70. First prize, Charles Thos. Nelson, The Lozells, Birmingham. Age, twenty months. (Second and third prizes not awarded.)

Class 10.—COCHIN-CHINA (Other varieties).—Cockerel and two Pullets, hatched in 1854.—76. First prize, Captain W. H. Snell, St. Swithin's Lane, London. Age, cockerel six-and-a-half months, pullets seven months. 74. Second prize, Rev. Grenville F. Hodson, Banwell, Somerset. Age, the last week of March. 77. Third prize, John Barnett, Wribben Hall, near Bewdley. Age, five months and three weeks.

Class 11.—BRAMAH POOTRA.—Cock and two Hens.—81. Second prize, Joseph Hinton, Blaina Iron Works, near Newport, Monmouthshire. Age, twenty-one weeks. 82. Third prize, John Henry Cliffe, Twigworth Villa, near Gloucester. Age, hatched May 29th, 1854. (First prize not awarded.)

Class 12.—MALAY.—Cock and two Hens.—90. First prize, James Leighton, 183, High-street, Cheltenham. Age, eighteen months. 89. Second prize, Charles Ballance, 5, Mount Terrace, Taunton, Somerset. Age, cock and one hen seventeen months, one hen over two years. 88. Third prize, John Gay Attwater, Hallingwood Farm, Coberley, Cheltenham. Age, nineteen months.

Class 13.—GAME FOWL (Black-breasted and other Reds).—Cock and two Hens, hatched before 1854.—94. First prize, N. N. Dyer, Manor House, Bredon, Tewkesbury. Age, sixteen months. 93. Second prize, N. N. Dyer, Manor House, Bredon, Tewkesbury. Age, sixteen months. 92. Third prize, Edward Farmer, Greet, Spark Brook, Birmingham. Age, two years. *Commended*.—95. John Powell, The Rylands, Taynton, near Gloucester. Age, one year and eight months.

Class 14.—GAME FOWL (Black-breasted and other Reds).—Cockerel and two Pullets, hatched in 1854.—105. First prize, T. William Pearce, Bromham Road, Bedford. Age, eight months. 101. Second prize, N. N. Dyer, Manor House, Bredon, near Tewkesbury. Age, six months and twenty days. 104. Third prize, T. William Pearce, Bromham Road, Bedford. Age, eight months. *Highly Commended*.—102. N. N. Dyer, Manor House, Bredon, near Tewkesbury. Age, five months. 106. George Ellis, Coach and Horses Inn, Bury St. Edmund's. Age, March, 1854. (A very excellent class.)

Class 15.—GAME FOWL (Duckwings and other Greys and Blues).—Cock and two Hens, hatched before 1854.—115. First prize, T. William Pearce, Bromham Road, Bedford. Age, hatched 1853. 110. Second prize, J. R. Rodbard, Aldwick Court, Langford, near Bristol. Age, two years and six months. 112. Third prize, George Ellis, Coach and Horses Inn, Bury St. Edmund's. Age, one year and five months.

Class 16.—GAME FOWL (Duckwings and other Greys and Blues).—117. First prize, J. R. Rodbard, Aldwick Court, Langford, near Bristol. Age, seven months. 120. Second prize, William Cannan, Eccleshill, near Bradford, Yorkshire. Age, six months. (Third prize not awarded.)

Class 17.—HAMBURGH (Golden-pencilled).—Cock and two Hens.—124. First prize, William Cannan, Eccleshill, near Bradford, Yorkshire. Age, one year. 123. Second prize, Charles Edwards, Brislington, Bristol. Age, hatched May, 1854.

Class 18.—HAMBURGH (Golden-spangled).—Cock and two Hens.—128. First prize, William Cannan, Eccleshill, near Bradford, Yorkshire. Age, one year. 129. Second prize, James Blackham, Thorn Hill Farm, Handsworth, near Birmingham. Age, five months.

Class 19.—HAMBURGH (Silver-pencilled).—Cock and two Hens.—132. First prize, Edward Archer, Malvern. Age, about seven months. 133. Second prize, Richard Branwell, Holsworthy, Devon. Ages unknown.

Class 20.—HAMBURGH (Silver-spangled).—Cock and two Hens.—143. First prize, Rev. H. K. Venn, Honiton, Devon. Age, six-and-a-half months. 135. Second prize, Colonel Clowes, Froxmer Court, Worcester. Age, six months and three weeks.

Class 21.—POLAND (Black, with White Crests).—Cock and two Hens.—145. First prize, Miss Mary Bury, Drayton Villa, Belbroughton, near Stourbridge. Age, six months. 146. Second prize, Miss Mary Bury, Drayton Villa, Belbroughton, near Stourbridge. Age, six months.

Class 22.—POLAND (Any other variety).—Cock and two Hens.—156. First prize, W. Graham Vivian, Singleton, near Swansea. Age, five months. 152. Second prize, Colonel Clowes, Froxmer Court, Worcester. Age, six months and one week. *Highly Commended*.—151. Colonel Clowes, Froxmer Court, Worcester. Age, seven months and one week. 155. W. Graham Vivian, Singleton, near Swansea. Age, five months. *Commended*.—157. Charles Edwards, Brislington, near Bristol. Age, hatched April, 1854. 158. Lady Georgiana Codrington, Dodington Park, near Chippenham. Age, various. (An unusually good class.)

Class 23.—ANY OTHER DISTINCT BREEN, NOT MENTIONED IN THIS LIST.—Cock and two Hens.—164. Prize, Jessop, Brothers, The Aviaries, Cheltenham. (Indian Gamc.) Age, hatched 1853. 163. Prize, Colonel Clowes, Froxmer Court, Worcester. (Andalusia.) Age, three years and six months. 161. Prize, Jacob Thornton, Heckmoudwike, near Leeds. (Black Hamburg.) Aged.

Class 24.—BANTAMS (Gold-laced).—Cock and two Hens.—169. First prize, T. B. L. Baker, Hardwicke Court, near Gloucester. Age, cock and one hen two years and five months, one hen five months. 171. Second prize, Thomas Blanchard, Burford House, Great Malvern, Worcestershire. Age, nine months.

Class 25.—BANTAMS (Silver-laced).—Cock and two Hens.—173. First prize, Thomas Blanchard, Burford House, Great Malvern. Age, unknown. 176. Second prize, Rev. Grenville F. Hodson, Banwell, Somerset. Age, one-and-a-half years.

Class 26.—BANTAMS (Black).—Cock and two Hens.—177. Second prize, Rev. Grenville F. Hodson, Banwell, Somerset. Age, three years. (First prize not awarded.)

Class 27.—BANTAMS (White).—Cock and two Hens.—180. First prize, Rev. Grenville F. Hodson, Banwell, Somerset. Age, two years. 181. Second prize, Colonel Clowes, Froxmer Court, Worcester. Age, ten months.

Ten prizes given by the Right Hon. the Earl of Ducie.

Class 28.—TURKIES.—Cock and two Hens.—193. First prize, John R. Rodbard, Aldwick Court, Langford, near Bristol. (Cambridge.) Age, seven months and two weeks. 188. Second prize, Miss Julia Milward, Newton Saint Loc, near Bath. (French.) Age, cock, June 3rd, 1851, one hen, June 12th, 1853, one hen unknown. *Highly Commended*.—186. Rev. Grenville F. Hodson, Banwell, Somerset. Age, hatched May. 192. Charles Edwards, Brislington, Bristol. Age, over one year. *Commended*.—187. Mrs. Harriet Hill, New House, Stretton Grandison, near Ledbury. (Norfolk and American.) Age, one year and five months. 189. Hon. Mrs. Percy Moreton, The Old Court, Tortworth, Wotton-Under-edge. (American.) Age, cock, 1852, hens, June, 1853. 190. Mrs. Jones, Waterloo Villa, Spa, Gloucester. Age, hatched late in 1853.

Class 29.—GEESE.—Gander and two Geese.—195. First prize, Mrs. Harriet Hill, New House, Stretton Grandison, near Ledbury. (Irish and Toulouse.) Age, one year and four months. 194. Second prize, Mrs. Harriet Hill, New House, Stretton Grandison, near Ledbury. (Irish and Toulouse.) Age, one year and four months. *Commended*.—199. Hon. Mrs. Percy Moreton, The Old Court, Tortworth, Wotton-Under-edge. (Toulouse.) Age, gander and one goose, 1853, one goose May, 1854.

Class 30.—DUCKS (Aylesbury).—Drake and two Ducks.—201. First prize, Bruton Ford, Ide, near Exeter. Age, six months. 207. Second prize, Mrs. Lydia C. Stow, Bredon, near Tewkesbury. Age, drake six months, ducks twenty weeks. *Highly Commended*.—202. J. R. Rodbard, Aldwick Court, Langford, Bristol. Age, six months and two weeks. 203. Hon. Grenville Howard, Lydiard, Swindon, Wilts. Age, about six months. 208. Geo. McCann, Graham House, Malvern. Age, eight months. 209. Charles Edwards, Brislington, near Bristol. Age, hatched May, 1854. (All in this class meritorious; pens 200 and 205 disqualified only on account of their bills being naturally discoloured.)

Class 31.—DUCKS (Rouen).—Drake and two Ducks.—212. First prize, Charles Ballance, 5, Mount Terrace, Taunton. Age, drake and one duck over two years, one duck over one year. 214. Second prize, T. William Pearce, Bromham Road, Bedford. Age, drake unknown, ducks seven months and fourteen days.

Class 32.—DUCKS (Any other variety).—Drake and two Ducks.—218. First prize, Mrs. Harriet Hill, New House, Stretton Grandison, near Ledbury. Age, about one year and three months. 221. Second prize, Charles Edwards, Brislington, Bristol. Age, hatched May, 1854. *Highly Commended*.—219. Edward Archer, Malvern. (Buenos Ayres.) Age, about five months. 220. Miss Steele Perkins, Sutton Coldfield, Birmingham. (Buenos Ayres.) Age unknown.

EXTRA STOCK.—*Commended*.—227. Henry Churchill, King's Head Hotel, Gloucester. (Silver-pencilled Hamburg.) Age, eight-and-a-half months. 232. Thomas Morris, Maisemore, near Gloucester. (Dorking cock.) Age, five months.

MODE OF FUMIGATING WITH TOBACCO.

SEEING you are desirous to be furnished with the different modes of fumigating, without the aid of Brown's Machine, for the use of Amateurs;—if the following has any advantage, you will be able to judge, and dispose of it accordingly.

We used to do all here with the garden sieve, placing it on three flower-pots, size 48's, set thus . . . , with bottoms up, in the passage of the house about to be fumigated. I

take a few round-pieces of wood-charcoal, and put them in the fire until red; taking them on a shovel to the sieve, and immediately covering it completely over with Tobacco-leaf or Tobacco-paper. I then give it a sprinkling of water from a fine rose, and leave it for a time, going outside, and watching its progress through the glass. I never allow it to blaze, going in at short intervals to gather together the Tobacco, or put more on, as the case may require; at each time giving it another sprinkling of water, to damp the surface.

In this manner, I have burned scores of pounds of Tobacco among all varieties of delicate plants, with every desired effect; but there are some Ferns that will not endure its fumes in any shape. I take care to remove such. Before I begin, I make everything ready. If the house is large, I put pots in two or more places in the passages for the reception of the sieve; for the removal of the pots to the different places would take more time than could with comfort be spent on it.

I have lately got an apparatus made by the blacksmith to answer the purpose of the sieve. It has a frame like that of a sieve, but of sheet-iron; the bottom is of small iron rods about a-quarter-of-an-inch apart, running in parallels; it has fixed feet or supports, three in number, four inches long; and a handle two feet long. Any country smith can afford to make such for three or four shillings, and it will serve a lifetime. I use Brown's machine for frames. I make a hole in front of the bed, betwixt the frame and bed, where I introduce the spout of the machine; as soon as the frame is full, I fill up the hole. I find it very handy for this purpose. —ANGUS McLEOD, *Wentworth Gardens, near Rotherham.*

FUMIGATING WITH TOBACCO.

In answer to your correspondent, "J. G.," and at the request of your note to his question; I am a little in his position, and after a four years trial I have, after nearly poisoning myself once or twice, at length, I think, succeeded in using Tobacco-paper to some purpose, for the destruction of the green fly. Some time since, when my greenhouse was half its present size, I bought a Swan Nash stove, which proved quite inadequate for the purpose I wanted it, viz., heating the house. To be short; I take the stove, and put a quarter-of-a-pound of Tobacco-paper in, first of all putting a few live coals in; make half the house, which is divided by glass sashes, perfectly air-tight, and let the stove burn till the house is so full that you can hardly go in to fetch the stove out. I then repeat the operation in the other house, and syringe the next morning. This is always effectual. I tried it last week with perfect success; the house being, from some reason, *very filthy*. Each division is about fourteen feet by twelve feet.—C. T. J.

QUERIES AND ANSWERS.

GARDENING.

ADVICE TO YOUNG GARDENERS.

"Being a constant reader of THE COTTAGE GARDENER, I have lately noticed in its pages one or two articles from Mr. Appleby, intitled, 'Advice to Young Gardeners;' and, as I belong to that class, I beg to present my best thanks to him for that advice. In his last article, he spoke of the difficulties young gardeners find in getting books; and as I, like the rest of them, am not over-burdened with wages, but still am desirous of treading in the footsteps of the eminent men of the land, and, by that means, securing for myself a name and fame in the gardening world, I am obliged to scheme a little, and, for the benefit of those who may be similarly situated, I will just detail my experience in the matter.

"In the first place, I am a teetotaller; which effects for me a saving of at least one shilling per week; and then, secondly, I have left off smoking, by which means I save at least another sixpence. Thus, you will see, that by leaving off two unnecessary habits, I am one shilling and sixpence in pocket, and my health better, and my brains clearer, than

ever they were before. I have seen young men who would say that they had not money enough to buy this book and that book, and yet, all the while, they would fool away double and treble the amount in cigars, or in buying shirt-studs, or something equally absurd.

"The principal works I read are the 'Popular Educator,' 'Orr's Circle of the Sciences,' 'The Cottage Gardener,' and Cassell's Paper. The 'Gardeners' Chronicle' I have lent me. The whole cost of the above, exclusive of the 'Chronicle,' does not exceed eightpence. As a guide to arithmetic, I use Cassell's, which is a very good one, and cost one shilling; and, for studying the French language, I find no work so useful as the lessons reprinted from the 'Working Man's Friend,' by the same author, which may be obtained through any bookseller, at the trifling cost of sixpence.

"In conclusion, I beg to tender my most sincere thanks to all the writers in THE COTTAGE GARDENER for the many valuable hints I have picked up from time to time from its pages; and earnestly do I hope that they may be long spared to co-operate with the Editor in diffusing a knowledge of gardening throughout the world.—B. BINEOFF."

[Your letter does you great credit; and we are very glad that you are pleased with the papers addressed to Young Gardeners. We publish your letter in full, in the hope that your example will induce many more, situated like yourself, to follow in the same steps. To be sober and diligent, as it evidently appears you are, is most commendable, and must eventually promote your good object, establish your character, give your employers great satisfaction, and afford great comfort and self-approval to yourself. You must try to improve your writing, and study grammar; for both are indispensable to a head-gardener. Continue to read and study the various books you mention, and other works and studies that Mr. Appleby and others recommend to you, and we may safely venture to prophecy that you will reach your laudable ambition of obtaining "a name and fame" in the gardening world.]

CONSTRUCTION OF AN ORCHID-HOUSE.

"I purpose, shortly, to erect an Orchid-house, and as I wish to combine economy with efficiency, beg you will kindly assist me in the pages of THE COTTAGE GARDENER. The house, a plan of which I enclose, I purpose to be thirty-five feet long, sixteen feet wide, inside measurement, span-roof ten feet high in centre, side walls five feet six inches high; no upright lights, as carpenter's work, timber, &c., is much dearer than brick; the walls to be hollow, with ventilation by holes in top of outer wall, and bottom of inner. The air will come in close to the hot-water pipes; by that it will be sufficiently heated.

"There will be a division (glass) in the centre, which will give two houses, seventeen feet by six feet each; one for Indian Orchids, the other cooler. I propose to have top ventilation, by having two beams running parallel the length of the house, with about six inches interval, and a board hinged on top. The moveable board to project over the others to insure no rain getting in.

"Now, the main point, viz., heating. I have read about various systems, and discussed square boilers, conical do., horse-shoe, and saddle, until my brain is circulating more rapidly than water in an inch pipe.

"I must say, I am in favour of an oblong boiler, open at top, Atkinson's plan, as, with unskilled attendants, it is easier managed, and kept clean. However, I am open to conviction. In the corner of the garden there is a tool-house, about ten feet square. I propose to build the house at the corner of this, running north and south. I would have a small room, about five feet wide, at the end of the Orchid-house, to contain boiler, fire-place, and some fuel; this could communicate with the tool-house by a door. I would have the chimney to go up the centre of the end wall of the Orchid-house, which would give additional heat; and I would also have a communication between the boiler-room and house, by a ventilator, so that no heat would be lost. I would have the under row of pipes (four-inch) with a gutter cast on them, for insuring plenty of moisture.

"Will this give heat enough? or would you advise tanks? bearing in mind that economy is a great object.—AN OLD SUBSCRIBER, *Dublin.*"

[Your proposed Orchid-house is on a very good plan, and an eminent Orchid grower says it will answer admirably. There is no objection to having walls instead of upright glass. The Orchid-houses belonging to R. S. Holford, Esq., at Weston Birt, in Gloucestershire, are all (there are four of them) built exactly like your plan, and nowhere do Orchids thrive better. Your proposed plan of letting in fresh air through a hollow wall, will, in hot weather, scarcely be sufficient. We would recommend, in addition, sliding doors, some fourteen or eighteen feet apart, fixed in the wall, to be opened on great occasions, the air from them to pass over open cisterns containing hot-water. It would take up moisture, and, consequently, give out air laden with that, to Orchids, necessary element. Your plan of giving air by means of moveable board is capable of amendment. Have, at six or seven feet apart, a glazed span frame, about two feet long, and a foot wide, resting upon a frame of wood of the same dimensions. This glazed frame to be balanced with a weight. When the air is too hot, the weight and frame to be lifted up six inches, by a pulley and cord, and when the air is cooled, to be let down again into its place. The advantages of this over your moveable board would be, more light, and less liability to get out of order, and greater certainty in giving air.]

Your great query, however, is the mode of heating, and the kind of boiler. You seem to be inclined to an oblong open one, and for the reason that it is easier managed by unskilled attendants. This is, we think, a mistake. In cold weather, when great fires are necessary, the water will often become of boiling heat, and then, of course, steam is generated, scalding-hot steam, which would infallibly kill any plants near to it. Take our advice, and have a good, substantial saddle boiler, with plenty of space under it, to hold fuel. We have proved this kind of boiler repeatedly, and always found it to answer well, and last long in use.

The arrangement of your pipes cannot be improved; but why not make use of a flue under them. A great body of heat is lost when the smoke from the fire ascends at once into the air. If you think the entire length of your two houses would be too far for the smoke to travel, then confine it to the first house, and let that contain your Indian Orchids. To moisten the air, cover the fire with dished tiles, to hold water. Your boiler should be three feet long, and two-and-a-half feet wide. This will allow six inches of water on each side, and eighteen inches inside for the fire. From the bars to the inside top of the boiler should be about fifteen inches. This space would hold fuel enough to last twelve or fourteen hours. The ash-pit should also be capacious, and should be twenty inches wide, and a foot or more deep. A great improvement on fire-places may be effected, by having a large iron door to cover entirely the furnace-door and ash-pit. This door to be shut when the fire is red, and the house sufficiently heated for the night. It would completely prevent the entrance of cold air, and keep the fire in for many more hours than if the fire-door and ash-pit were exposed.]

GREENHOUSE WITH WEST ASPECT.

"I am intending to build a small greenhouse for the culture of Geraniums, Cinerarias, Fuchsias, &c., which I should like to place on the west front of my house; but I fear, if built in the form of a lean-to, the aspect would be unfavourable. Will you kindly give me your opinion on this point?"

"If not placed in this situation, it must be built in the centre of the garden, where the back wall would be conspicuous. Would it be objectionable to cover it with *Ivy*?"

"I am advised to choose a lean-to in preference to the span-roof, on economical principles.—ANNA."

[Your greenhouse will grow your plants admirably, if a lean-to, and facing the west; but we would advise the south end to be nearly all glass, as far down, at least, as the stage. The chief objection to such an aspect is the great heat from the sun in summer afternoons; and, at these periods, you must be particular in giving air. If it met your wishes, on this account we would recommend the sloping roof of Hartley's Patent, and the south end, and the upright glass in front, to be crown-glass; the latter to be shaded in the afternoon, either with a curtain, or a little size put on the glass for that season.]

If you built your house in the garden, there could be no objection to covering the outside of the wall with *Ivy*. Of course, span-roofed houses, nearly all glass, require more heating in cold weather than a lean-to. You would lately see a modification of the lean-to, as practised at Hitchin Nursery; but probably it would not be elegant enough to suit you. For all the purposes you mention, the position you allude to will answer well; and being close to the living rooms is a great recommendation.]

HEATING A CUCUMBER AND MELON-PIT.

"I am about to erect a pit for the growth of Cucumbers and Melons, and other general purposes (Pines excluded); the length will be about forty-three feet, by nine feet wide, outside measurement. It is to be heated on the hot-water system, and it is proposed to place the boiler in the middle, at the back of the pit, outside, and to work it right and left from the boiler. There will be ten sheets of glass in the whole length; of course, it will be divided in the middle; then one end will be divided into two, and the other end into three divisions, as it is proposed to build up one sheet entirely for propagating. It is likewise proposed to run the flow-pipes from the boiler across to the front, then along the front for top-heat, then descend and run three times backward and forward underneath for bottom-heat, before it enters the boiler, using three-inch pipes. If it is found that is not sufficient for top-heat, to fix a sort of tube, or funnel (say a few common drain tiles), through the centre of the bed in each division to communicate with the bottom-heat, to open and shut according as circumstances require. Do you approve of these arrangements?—T. S. S. H."

[We quite approve of having your furnace and boiler in the middle, at the back of the range. You can thus heat either half—separately, as you like. See what was said lately to other correspondents, on a similar subject; and what was said of a plan adopted by Mr. Fish. By the plan you propose, you are quite aware that you can have no bottom-heat *without* top-heat. You do not say what number of flow-pipes you have in each division; if only one, you will not have heat enough; and will require tubes, to allow heat to rise from the three pipes you appropriate to bottom-heat. For several purposes, such as continuous Pine growing, we should so far adopt your plan as to have two flow-pipes and two returns; the one above, the other below. But as you speak of using these pits for various purposes, we should prefer having the power to give top-heat and bottom-heat separately, having a flow and return-pipe for each. In doing this, we would take the flow-pipe from the boiler, into a cistern, placed eighteen inches or so above the highest pipe; and in this cistern we would have four holes for other pipes, which would thus supply two flows for bottom-heat of both divisions; or two small cisterns, one in each division. These holes, or pipe openings, being fitted with valves, or wooden plugs, you could let the heat on one, or all four, as you liked. Did you intend to force very early, we would advise four-inch pipes, instead of three-inch. Of course, you are aware that however many the compartments you may have in each division, the temperature will nearly be the same—of that half of your range; and did you wish for power over each compartment, you must have stop-cocks at each.]

COMBINING HOT-WATER WITH FLUE-HEATING.

"I have a small greenhouse and propagating house, which is heated by a furnace in front, and a flue running along inside the house; the fire-place, or furnace, is quite outside, and about three feet in length before it reaches the house; over this furnace I have a pit covered with glass, eleven feet long, one foot deep, three feet wide. This becomes very warm when the fire is lighted, and there is a hole in the floor of it by which I can admit more or less heat, as I want it. I conceive that it would not be difficult to have a water tank in the floor of this small pit, heated from the fire below, which might be used for spring propagation of Cucumbers, Melons, and cuttings of various kinds. Your opinion will be valuable, and still more so any direction you will give. Should there be a circulation of the water? or will it answer in one mass, replenished as wanted? The simple question is, how I can best arrange a tank over the fire, to fill the whole floor of the small pit? which floor is

eleven by three feet. I imagine a tank of tin, or tinned iron, would be the most easily heated; or it might be of wood.—VERAX."

[We have no doubt, that a tank of tin, zinc, or galvanised iron, some three inches deep, and covered with sand, without any divisions, would answer very well, if you have plenty of heat. If you make it, however, two feet and a half wide, a division of wood or iron along the middle, except a small space in the middle, and at the two ends, would not only promote an active circulation, but would make it stronger for carrying the weight of sand and pots over it. Instead of the hole above the furnaces, or along with it, we would reduce the thickness to four or six inches, so as to be quite safe from smoke. But as you succeed so well with a covering of gravel and sand over the flue in the greenhouse, why resort to a tank at all? If you do not allow the water to escape, but have a close lid, to be moved only when the tank wants replenishing, you will just have as dry a heat as if escaping from the covering of the furnace. Provided this covering is safe, so as to exclude all bad gases and smoke, were we in your place, we would cover the space over the furnace with brickbats, laid very open and hollow, and we would continue that open work, so as to resemble little flues to the two ends, over that we would place rough gravel, then finer, then fine sand, for plunging in, leaving an open space, here and there, to let the heat up, and pour in water, to secure moisture.]

RHUBARB FORCING OVER A BARK-BED.

"I have some very fine *Rhubarb*, which I intended to force. I have a large lean-to greenhouse, about seventy feet long, south aspect, and about twelve feet wide, with two divisions; first, twelve feet for a potting-shed, &c.; the next, twenty-two feet, has got a large bark-bed, the whole length eight feet wide, five feet deep. It will hold six or eight tanner's cart-loads of bark. The remainder of the house has a stage for pot-plants in the usual manner. I had some thoughts of placing the *Rhubarb* on the bark; but as I have never tried any that way, I am afraid it may be too hot when the pit is fresh filled. I have it now filled with old; but it is nearly exhausted. Will you have the kindness to give your advice, as to what heat would be most suitable for it, to get it early for market? The house is heated with hot-water, with a flow and return, with a stop-cock at the end of the bark department. Could I do anything under the stage of the plant department; or would the drip of the pots be an injury?—T. D."

[If your bark-beds were all fresh, there might be some danger of burning the roots of your *Rhubarb*; but not so much as if you mixed the old and the new together. We do not think there would be much danger if you placed the new at the bottom, and the old on the top. A bottom-heat of 70° would not hurt it, with a top heat of from 50° to 60°. In case you should be afraid of over much heat, make a floor over the bed, with old boards, wattled hurdles, old crates, &c., leaving six inches between that and the bed; on this, plant your *Rhubarb*, with as much earth with the roots as you can; fill up round your platform, and when the heat gets rather too much, pull away the tan, so as to let a stream of air underneath your roots, and keep your house rather cool. A vast quantity of *Rhubarb* may thus be easily grown. You would see, the other week, that *Mushrooms*, *Endive*, *Salads*, &c., may be grown under the stage of the greenhouse, if the drip is prevented by saucers or a water-proofed covering.]

ARTIFICIAL HEATH-MOULD OR BOG-EARTH.

"I cannot obtain bog-earth under twenty miles. *Rhododendrons*, *Kalmias*, &c., consequently fail with me. Is there any artificial compost which will fully answer for those plants? I have a profusion of leaves every year, deciduous Oak, Elm, Sycamore, and Laurels, which rot for the border. Will they answer with sand, or other material?—VERAX."

[Well-rotted leaves, say, two or three years old, with a portion of one-year-old among them, with fully one-third of sand, make a good substitute for heath-mould for the plants you mention. If you could add a good portion of marly clay, such clay as falls and crumbles when exposed, you could scarcely get a better compost. You would see, in a late volume, how splendidly all such plants did at Luton

Park, in such marly clay alone, after they had been tried with other compost, and failed. Mr. Fish says—that the plants there are getting quite luxuriant, and rooting amazingly. Where heath soil cannot be got, a little clay, so as to keep the compost compact, will always be an advantage.]

PLANTING VINES IN GREENHOUSE.—PEACHES, NECTARINES, AND APRICOTS IN GREENHOUSE.

"About a month ago, I purchased a greenhouse, also twelve Vines three years old. I took them up from the beds, and potted them in large pots, and placed them in my cellar, as it would be the end of November before my greenhouse will be ready. Would you please say, whether I should plant them in the border at once, or keep them in pots in the cellar till spring, and then plant them in the border. The following are the sorts:—3 Black Hambros, 2 Mill Hill, and 2 Pope Hambros, 1 White, and 1 Grizly Frontignac, 3 Muscat of Alexandria. I have room for two more. Will *West's St. Peter's* be the best; as I see you invariably recommend it? My Pines are *Montserrat* and *Enville*. Can you recommend any better-flavoured? I intend to grow Peaches, &c., against the back-wall. Will the following suit? or, if not, please say the sorts I should procure. In the Pine stove—one Royal George Peach, and two Elrue Nectarines. In the greenhouse, one Royal George, and one Noblesse Peach, and one Moor Park Apricot.—TROUBLESOME."

[Judging that your border is not yet fairly finished, it might be advisable to defer planting the Vines until the end of February. If they had been planted out before the ground was cold, and well covered up afterwards, the roots would have been progressing during the winter. If by heated soil, hot-waterings and coverings, you can give the roots a start of the buds in spring, you will succeed all the better. As you seem to have plenty of heating power in your Pine-stove, we would almost be tempted to start the Vines there about the end of February, and then carefully plant them out in the middle of May, taking care, previously, to air the soil, and to have some warm in readiness to place over the roots when disentangled, and some warm dung to cover the places. A little time may thus be gained, if these niceties are attended to. The *Frontignacs* may be placed at the warmest end of the greenhouse. The *Muscats* ditto, in Pine-stove. The *West's St. Peters*, or the *Barbarossa*, will do for either. A Vino of the Dutch *Sweet Water*, in the stove, would give you very early Grapes. If you have no stage in the greenhouse to intercept the light, and your Vines are confined to the rafters, Peaches, &c., would succeed on the back-wall; but we cannot advise you to place Peaches in the Pine-stove. Vines, or Figs in pots, would answer better.]

LATE-GROWING LATERALS ON THE VINE.

"I have some Vines which have never ceased growing. They were set to work about a month or six weeks before last Christmas; the laterals still keep green. One or two buds at the extremity of one young rod have broken. I want to begin to force about the commencement of the new year, and it is quite time I had pruned. Will it be safe to do so? There are plenty of good buds left. Shall I prune back to the buds, as usual?—CHESTERFIELD."

[There is no advantage in having laterals growing so late. After these frosty nights, there will be no danger in pruning the Vines now, or even much earlier; though it would then, and would now, be desirable to keep the house at a low temperature, both before and after—say not above 40°, even if you had plants in them. If empty, a few degrees of frost will do no harm.]

STAGE FOR A SPAN-ROOFED GREENHOUSE.

"I am about to erect a greenhouse in Nottinghamshire. My ground will allow fifteen feet only in width, but as long as might be required. I thought to have it a span-roof, nine feet at the back, twelve feet in the centre, and six feet four inches in front. If you should approve of my suggestion, will you please to advise me the best plan for erecting the stages?—FOX."

[We conceive that you mean to have a brick wall, nine feet high at back; brick and glass, six feet four inches in front; the ridge of the roof, in centre of the house, to be twelve feet from the floor. In such a case, the roof next the back wall will be *flatter* than the one in front. We presume it is to stand east and west. If it had stood north and south, we should have preferred both sides being alike. Even now, your house would look better, and there would be less drip, if the front and back wall were of the same height. As it is now, we would recommend a shelf, some twenty or twenty-four inches wide, round the front and ends of the house, and a border of the same width at back, and a shelf then above it, if deemed desirable. We would cover the back wall with creepers—Oranges, or Camellias. Then we would have a two-and-a-half feet path, and, if small plants were to be grown, we would have a stage in the centre, corresponding to the roof, the tallest and single shelf being in the centre, and successional shelves falling regularly to each side, until the last was a couple of inches higher than the front shelf. By this arrangement, plants in bloom could be kept on the north side of the stage, and those growing on the south side. If large plants were wished, a flat, open, sparged table would be best.]

MOVING LARGE DECIDUOUS TREES, EVER-GREENS, AND PERPETUAL ROSES.

"1. Can I safely plant Limes, fifteen feet high; Sycamores and Chesnuts, twenty feet high, after the 25th December?

"2. The trees I shall get will, of necessity, be one night out of the ground. Will that signify much? And can I do anything to diminish the risk of ill-consequences from their being so long out of the ground?

"3. Would it be better to have them home now, and cover their roots with soil and litter, so as to have them at hand to plant when I can find mild weather after Christmas? (The land does not come into my hands till after Christmas.)

"4. I have just moved, from one part of my garden to other parts, three *Laurustinuses*, six feet high, and at least six feet *diameter*, in full flower; two of them in sheltered situations; one in a situation rather exposed. I have also moved an *Aucuba Japonica* about the same size. Moved by many hands, with great care, very little damage to any roots, and those carefully cut. Would you recommend my mulching them; and when? Do you recommend my giving them shelter, covering with mats, sprinkling fern (of which I have plenty) over them; or putting stakes, and thatching a pent over them with fern, leaving the sides open? Or, will you advise me as to any other measures for insuring their safety? I am very anxious to preserve them, if I can, and will take any trouble to secure their preservation.

"5. Ought I to prune *Perpetual Roses*, still in leaf, now? And may they be moved while the leaves are green?—W. H."

[1st. Certainly, you can move the large trees if you go the right way to work, and trees of the same kinds of double the heights you mention.

2nd. Choose moist, dripping, or drizzly days, and the roots of such trees take little hurt for two or three days and nights, if they are packed in a little hay, with mats all round. Avoid dry easterly, windy days, and frosty nights, and your trees will take no hurt with a single mat round the roots.

3rd. It would *not* be better to take up the trees now, and put them in by the heels till you are ready for them; meantime, however, make sure of the very trees you choose, as, if they come from a nursery, under the rule of first come, first served, you will "be done for." In troublesome times, like these, we never like to trust anybody about fancy trees and plants. We would mark our lot of trees, and come to terms with the nurseryman, to let us have them as we were ready to plant them. But there is a flaw in your letter here; and yet it is the most business-like letter we have seen these six months. We ought to have known whether the trees were to be moved from your own land, or from some neighbour's, or from a nursery. If from a nursery, you will not be able to get all their roots, except on this wise. See the trees, and the very men who are to take them up, the morning of planting; promise the men something extra if they took *right pains*; stop with them all the day, and see how well they do it; let them drink the health of the Field Marshal

the Lord Raglan, before noon, and that of Canrobert and our allies before it is dark. We have been planting evergreens from twelve to twenty feet high, not long since, and we got double the work done, and all the roots, by the same means.

4th. If you had good balls of earth with the *Laurustinuses* and *Aucubas*, they will hardly feel the moving without doing anything more to them except mulching; and all your large trees must be well and thoroughly mulched as soon after planting as possible. As you have plenty of ferns, do not spare it over their roots, and among the bottom branches of the *Laurustinuses*; but the *Aucuba* needs no help, except the mulching on the surface. No plants are easier to move than *Aucubas* and Sweet Bays, as they make such abundance of white fleshy roots.

5th. If your *Perpetual Roses* are in *very good* condition, do not prune them till the end of February. If they are not in a good condition, prune them now; green leaves on *Roses* are of very little use to them after the first of November. Gardeners begin to transplant *Roses* early in November, when the *Perpetuals* are as green as leeks; and they prune them the same day; but nurserymen send them out with all their leaves, because people like to see plenty for their money; but that plan is now, we believe, the most barbarous and unpractical of all we do or sanction. Any *Rose* ought to be fairly pruned before it is taken up; and, if possible, a week or ten days before. We wonder that the trade never set their faces against a practice which is just as much against their interest, as it must be against the poor suffering *Roses*. The right way to buy *Roses* would be to go to the nursery, any time in October; buy and prune on the spot; take home your cuttings, plant them, and be in no hurry to get home your *Roses* till other works are finished. Any time before Christmas will do, as no one else will have them after they are pruned; and they improve for planting all the while.

6th. The best way to stake tall trees is to wind a hayband round each before it is planted, at the place where three stakes meet—say from six to ten feet from the ground. This hayband should occupy about a foot of the stem of the tree; then the three stakes will never "chafe" the bark. A handful of hay put in between a stake and the bark is just like "love's labour lost," may do a great deal more harm than good. "Sack-tying," or what they use for tying sacks, is the best thing to tie stakes to trees with.]

BLOOMING TROPÆOLUM TUBEROSUM.

"I have been trying, these last two years, the *Tropæolum tuberosum*, the great objection to which is the late period at which it comes into flower, having very little time before the frost cuts it up. Can you, or any of your readers, inform me, whether it can be made to blossom earlier, and by what treatment?—E. L., Thelford."

[Some of our readers may know more than we, their instructors; but we fear that none of them are aware of any means by which to induce this plant to change its natural time of flowering, even for one week. Any information on this will be acceptable.]

PLANTING AND PRUNING HOLLY—MOVING RHODODENDRONS.

"I am about to plant a *Holly* hedge on the inside of a wall recently built against a bank. The *Hollies* are fine and large-rooted. I think of clipping the sides of them, to make at once a more compact fence. Would you recommend me to do so? They are from four feet to six feet high. Will it be safe to cut them down to an average height of about three feet when they are planted; or best to leave them until the spring? Is this a good time to bed out *Rhododendrons*?—A CONSTANT READER, Kent."

[By all means, clip both sides of your *Holly* hedge as soon as you finish planting it. You may, also, cut the plants to three feet, at the same time; but what a dreadful sacrifice; and what for? See that the soil is well stirred full eighteen inches below the bottom of the roots, and quite on to the wall. See, also, that there are no false or hollow parts between the top of the wall and the bank, where the rain will wash the soil into, from the hedge in a thunder-storm. Plant the *Hollies* two inches deeper than they stood before, and mulch both sides of the hedge the whole length. Two feet from the wall would be a good

distance for the hedge to stand—the centre stems, not the side of the hedge—and the mulching ought to reach to the wall. Pray let some well experienced person superintend the job, which is a dangerous game in careless hands. We have seen about eighty yards of such a hedge entirely lost the first season, for want of economy, as Cobbet would say; that is, for want of good management, or stinginess, which is a very different thing from economy.

As to the *Rhododendrons*, your's is a queer question. To "bed them," supposes them to be under six inches in height; and if they are good sorts, you may lose every one of them by frost by bedding them now. Old, or good-sized plants can be planted now, safely enough.]

POULTRY.

POINTS OF EXCELLENCE IN POLAND FOWLS.

"A YOUNG BEGINNER will feel obliged for a reply in THE COTTAGE GARDENER to the points on which a Poland fowl would be judged."

[Polands would be judged by the figure and condition of the birds, the top-knot being an all-important point. This should be globular in the hens, and in the male birds full, but facing backwards and on the sides; in both cases, however, regularly and evenly. The tail, also, in all varieties should be ample, and with the rest of the plumage indicate high condition. Combs horn-like, but very minute; legs blue and clean.

The *White-crested Black Polands* must be uniformly of the latter colour, the tuft alone excepted; but even here a few black feathers are always present in front, unless artificially removed.

Golden Spangled Polands.—A clear, bright, yellowish-bay body-colour, regularly spangled throughout in the hens, except the wing-coverts, which are laced, and the under part of the body, which approaches black. The cock's breast to be richly spangled, and his hackle, back, and saddle, brilliant orange-red, of which colour the top-knot should be also, as the introduction of white certainly mars the general effect; tail black, but very richly bronzed.

To the *Silver Spangled Polands* may be applied the same description; the light bay ground being changed for a silvery-white. In both varieties, however, a question is raised as to the markings of the hen's crest, which, to our eye, has the best appearance when very lightly spangled, or else laced; but as the topknots improve with age, as to their form, so they are apt to deteriorate as to their markings.

The other varieties of Polands, being mainly of uniform colours, are easily determined on, the topknot, of course, in all cases an essential feature.—W.]

HISTORICAL NOTES ON THE INTRODUCTION OF VARIOUS PLANTS INTO THE AGRICULTURE AND HORTICULTURE OF TUSCANY: a summary of a work entitled *Cenni storici sulla introduzione di varie piante nell'agricoltura ed orticoltura Toscana*. By Dr. Antonio Targioni-Tozzetti. Florence, 1850. — (From the *Horticultural Societies Journal*.)

(Continued from page 152.)

Safflower (*Carthamus tinctorius*) much cultivated in some parts of Italy, especially in the Romagna, some two or three centuries back, when first it came to be generally used for dyeing silk, is now much neglected there, for it is found that that which is imported from Spain or from East India yields a richer colour; and even that from the Levant and from Egypt, although considered as inferior to the Indian and Spanish, is still superior to the Italian. The plant was probably unknown to the ancient Romans, but Theophrastus, Dioscorides, and, and many other Greek authors mention it under the name of *Cuccon* or *Cniceon*. It was not then grown as a tinctorial plant, but for the medicinal properties of its seeds, and the flowers were only used as a condiment. The exact period of its introduction into Italy is doubtful. Pegoletti, in the fourteenth century, speaks of it as an article of importation only for the use of the dyers; Matthioli, in the sixteenth, mentions its cultivation, although he alludes only to its medicinal, not to its tinctorial, properties. One of

the popular names quoted by Targioni, that of *Saracenic saffron*, would seem to indicate that the Italians had it from the Moors, probably during their dominion in Sicily.

The native country of the safflower is involved in great obscurity. East India is given by Professor Targioni on the authority of systematic botanical works, but to learn from the Indian botanists of the present day that it is there only known in cultivation, and that in the cold season, a circumstance showing clearly that it is not an indigenous plant brought into cultivation, but an importation from a different climate. It may possibly prove to be of African origin, if we may judge from the Abyssinian specimens distributed as indigenous among Schimper's collection. These specimens have much more spinous involucres than the variety commonly cultivated, and, in other respects, seem to show, at any rate, a nearer approach to a wild state.

Saffron (*Crocus sativus*) is a native of Italy, as well as of many other parts of Europe and of the Levant, and has long been cultivated for the odour and flavour, as well as in more modern days for the tinctorial properties, of the styles. It is mentioned by many ancient writers, and was certainly cultivated in Southern Italy and Sicily as far back as the time of Pliny. It was also extensively and profitably grown in Tuscany in the fourteenth and fifteenth centuries, when it was made the subject of many fiscal and protective regulations, but it is now entirely neglected as being imported at much less cost and of better quality from Southern Italy, Spain, Barbary, and Greece, and even from Orange in France. Besides its consumption by dyers it is much used for colouring Parmesan cheese and several kinds of Italian paste for soups.

Yellow Wood, Weld, or Dyer's-weed (*Reseda luteola*) is another tinctorial plant indigenous to Europe. The ancient Romans made use of the wild plant only, but in more modern times it has been made to produce a much finer dye by cultivation, which appears in Tuscany to have commenced in the flourishing days of the wool-trade. In the sixteenth century it was very general, and, like saffron, the subject of numerous fiscal and protective ordinances. It still continues to form an article in the agricultural produce of the Cortona district.

Datisca cannabina, an oriental plant, first discovered in Crete in 1594, has, in our own days, and especially by Braconnot in 1816, been shown to produce a very fine and permanent yellow dye, and to be well adapted for growth in the climate of Tuscany. Prof. Targioni refers on this occasion to several other papers in which he has strongly recommended its extended cultivation, especially in the Maremma, but it does not appear how far his recommendations have been practically adopted.

The cultivation of the *Poppy* (*Papaver somniferum*) dates from the most remote ages. It varies considerably in the colour and size of the flower, in the form of the capsule, in the colour of the seeds, etc.; but all these varieties constitute a species, which is found abundantly in a wild state in South-eastern Europe, and in the Levant. In many cases it may, indeed, have escaped from cultivation, but there is every reason to believe that, in a great part of the East Mediterranean region, it is a truly indigenous plant. That the ancient inhabitants of Italy were aware of its narcotic properties is proved by the frequent allusions in the verses of Virgil, Horace, Ovid, and other Roman poets: we learn from Pliny that poppies were cultivated and held in high estimation in his time, and Livy's story of the answer given by Tarquinius Superbus to his son's envoy, by cutting off the heads of the poppies of his garden, would carry us back to a much earlier date. In Tuscany, at the present time, poppies are extensively sown for medicinal purposes, for the extraction of oil from the seeds for the use of artists, and also when olive oil is scarce to supply its place as a condiment, or for burning, or making soap, &c. Its seeds are also eaten, but the climate is not hot enough to grow it for the extraction of opium.

There is no plant, observes Prof. Targioni, whose history shows so many vicissitudes as that of the *Tobacco* (*Nicotiana tabacum*). Imported from America soon after the discovery of that continent, it was received into the old world with a species of enthusiasm, and Europeans, Asiatics, and Africans, began everywhere to smoke, to chew, and to snuff. It was not long, however, before some of the evils and incon-

venieucies involved in the practice began to appear, and a host of enemies were raised up against it. Theologists pronounced it an invention of Satan which destroyed the efficacy of fasting, a point much disputed in the sixteenth and seventeenth centuries. Councils forbade it to all ecclesiastics under their control. Popes Urban VIII. and Innocent XI. punished the use of it with excommunication; Sultan Amurat IV. with the most cruel kinds of death; Schah Abbas II. with penalties almost as severe; Michael Feodorovitch Tourieff ordered a bastonade for the first offence, cutting off the nose for the second, and the head for the third offence: Prussia and Denmark simply prohibited, and James, of England, wrote against it. Finding, however, that no penalties, however severe, could check the indulgence in a luxury so highly appreciated, and sovereigns and their governments soon found it much more advantageous to turn it into a source of revenue, and the cultivation and manufacture of tobacco was gradually subjected almost everywhere to fiscal regulations, restrictions, or monopolies, which still prevail under various forms over the greater part of Europe. In Tuscany its growth was prohibited, except in a few localities where it was allowed under certain restrictions from 1645 till 1789, when the enlightened Grand Duke Peter Leopold declared free the cultivation of tobacco over the whole territory. But the country did not long enjoy this privilege; the intrigues of private speculators prevailed on Ferdinand III. to restrict it to the same localities only which had previously possessed it. The number of these was further reduced in 1826, and the permission totally withdrawn in 1830, and tobacco is now only grown here and there by stealth.

Tobacco was in such general use in America when first discovered, and is there so widely spread, that it is difficult to come to any conclusion as to what precise part of that vast continent is its native country; probably some portion of the Mexican empire. As to the precise dates of its introduction into Europe, it has been already stated that it followed closely upon the discovery of America. The Spaniards under Columbus had scarcely landed in Cuba, in 1492, when they began to smoke cigars; but they could only fully appreciate its luxuries when, in 1518, Fernando Cortez occupied the island of Tobago, where the plant was found growing in great abundance. Hernandez, the naturalist, was, it is believed, the first who brought it into Spain from Mexico, in 1539. It was introduced into Portugal from Florida by one Flamingo, and into France by Father André Thevet, or by some friend of his, although the more common opinion is that the first seeds received there were those sent about the year 1560, to Queen Catharine of Medicis, by Jean Nicot, French ambassador in Portugal. It was probably raised also in England a few years later, but received no notice till its well known introduction by Sir Francis Drake from Virginia in 1586. In Tuscany, it was first cultivated under Cosmo dei Medici, who died in 1574, having been originally raised by Bishop Alfonso Tornabuoni, from seeds received from his nephew Monsignor Nicolo Tornabuoni, then ambassador at Paris, a great amateur of plants. After him it long bore the name of *Erba Tornabuoni*.

(To be continued.)

TO CORRESPONDENTS.

AQUATIC PLANTS (C.).—If you write to Mr. Appleby, and enclose it to us, it is likely he will procure you what you want. The *Rhipsalis* in your Warden case may grow freely, as you say, but it will not flower. Like all other succulent plants, it requires a dry atmosphere, and full exposure to the sun to ripen the wood in order to produce flowers. Could you not take it out of the case, and place it in a window facing the south, giving it a very scanty supply of water? It would then form flower-buds and bloom. Afterwards it might be replaced in the case.

LYCOPONIUM? AND ONCIDIUM PAPILIO (G.).—There is no plant named *Lycopodium alaicorne viridis*. We should be glad of a portion of the plant you have under that name. We suspect it is *Platyterium alaicorne*, or Elk-horn Fern. A small piece of it, sent by post, will settle the query. Your *Oncidium papilio* shows buds, but they will not open in your temperature of 60° to 70°. You ask, "Should you allow it to rest; and what does rest mean?" All orchids should have a rest, and that means a cessation of growth. To induce this, especially in this *Oncidium*, or Butterfly plant, very little water should be given at this season and all through the winter, and the temperature should be lowered also. 60° Fahrenheit should be the maximum, and 55° the minimum. Observe the state of the leaves. If they become soft and flaccid, then give a moderate supply of water, just enough to keep them plump. Once a month will do that; but as your house is heated by a flue the air

will be dry, and that is bad for all air plants. Place a few shallow vessels full of water on the flue, to correct the dry atmosphere, but take care that no visible steam arises from the water. At this season actual steam is injurious. The flower-buds now on the top of the flower-stem will remain dormant through winter, and will, probably, open in March or April.

RHONOLIA CHAMPIONI (A Country Gardener).—Mr. Appleby will write on this plant shortly.

TURKEYS AT THE CAMPAINGE SNOW (Taunton).—The weights published at page 144 are of the pen of three. The largest single Turkey we ever heard of was a full-grown cock of 32 lbs.

VULTURE-HOCKED SHANGHAES (Argus).—They are of no particular strain, but occur more or less frequently in all yards of this kind of fowl. We do not think the Vulture-hock gives a bird any title to superiority over one not having his hocks so feathered. We do not know any thing about the bird you mention, but we know where one as good is to be had for thirty shillings.

COUVE TRONCHUNA (P.).—The leaves and stalks are the parts used. The stalks are peeled and cooked like Sea-kale. It may be sown in August, be preserved in frames through the winter like the Cauliflower, and, like it, be planted out late in the spring; or the seed may be sown early in the spring on a gentle hotbed, and be planted out as soon as the seedlings are large enough. They require a rich soil, but no other cultivation than is given to the Cabbage-tribe generally.

LAW OF GREENHOUSES (A Constant Subscriber, Oxford).—In a sheltered situation, a span-roofed Greenhouse, framed together to stand on the ground without being attached to it, "like a magnified hand-light," might be safe from high winds, but even if the posts of such a greenhouse fitted into sockets let into the ground, we do not think that such socket fastenings would attach it to the Freehold, either at a Rectory, or elsewhere, so that the tenant must not remove it without permission. A brick flue, sunk in the ground, to heat such a greenhouse, unless the greenhouse were attached to it, or to the chimney, would not alter, we think, the tenant's right to remove it. These, however, are no more than opinions, and we must not be expected to advise upon law points. There is no objection to a wooden floor for a greenhouse; if care be taken that it does not come too near to the flue.

GAS HEATING A GREENHOUSE (J. H. S.).—If the pipe containing the hot air, after passing through your greenhouse, descends again into the cellar, and communicates with the gas-stove by entering it under the burner, we think a rapid circulation would be kept up.

ECONOMICAL MANURE (S. W.).—We know nothing of this nostrum. Be assured that it is no better than you could make yourself from your own water-closets, mixed with water and applied in a weak liquid form. This home manufacture is not appreciated as it will be ere long, and as it is appreciated by the Chinese.

VARIOUS (B. H. S.).—If you wish the heap of Leaves to decay, turn it over frequently—putting the dry outside each time into the middle. Your Cabbages need no protection. Trim in your Ivy close next April, and then shorten the breast shoots as often as they project further than you wish.

BREAKING UP TURF—REMOVING TREES BY A TENANT (Chesham).—"A tenant, with a four year's unexpired lease from last Michaelmas, applies to his landlord for permission, this autumn, to break up the sward of an orchard, to plant Gooseberry and Currant-trees, at his own expense; and asserts, should his landlord and himself not be able at the end of the lease to come to terms, for his continuing the farm by lease, or otherwise, that he, the tenant, has the power to cut up, as weeds, the plantation of Currant and Gooseberry trees, should his landlord refuse to take them at a valuation. Has the tenant this power?" The tenant has no such power. He cannot break up the sward to plant the trees without your leave; and having planted them, unless he be a nurseryman, he would be liable as a trespasser if he removed them even, and much more if he destroyed them.

MANGOLD WURZEL SEED (A Subscriber from the Beginning).—Select the finest bulbs; without cutting either their roots or tops, plant them to the same depth as they were growing, in rows, and three feet apart each way. The soil should be rich, but not recently manured. Plant them early in February.

NAME OF PLANT (M. R. W.).—Yours is *Clematis azurea grandiflora*. It is quite hardy, and the best of the whole genus. It will succeed either on a trellis or wall.

NAMES OF FRUIT (A. B., Chislehurst).—No. 1. Beurre Diel. 2. Easter Beurre. 3. Not known; worthless; evidently a wilding. 4. Not known. You had better have both 3 and 4 grafted with something better worth growing, such as Wyken Pippin, Court of Wick, Cockle Pippin, or Claygate Pearmain. No. 5 is Alfriston.

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WEEKLY CALENDAR.

D M	D W	DECEMBER 12—18, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
12	TU	Colymbetes fuliginosus.	29.934—29.782	35—28	S.E.	—	59 a 7	49 a 3	11 a 46	☾	6 6	346
13	W	Opilus mollis.	29.579—29.333	46—38	E.	—	VIII	49	morn.	23	5 38	347
14	TH	Phosphuga atrata.	29.299—29.197	43—25	N.E.	—	1	49	0 58	24	5 9	348
15	F	Daisy flowers.	29.244—29.196	33—27	N.E.	—	2	49	2 13	25	4 40	349
16	S	Cambridge Term ends. O! Sap.	29.526—29.324	33—27	N.	20	3	49	3 33	26	4 11	350
17	SUN	3 SUNDAY IN ADVENT.	29.698—29.647	36—22	N.	—	4	49	4 16	27	3 41	351
18	M	Oxford Term ends.	29.661—29.546	34—26	S.E.	—	4	49	6 24	28	3 11	352

MEOTEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 46.4°, and 34.8°, respectively. The greatest heat, 61°, occurred on the 13th, in 1842; and the lowest cold, 11°, on 13th, in 1846. During the period 93 days were fine, and on 91 rain fell.

In our very last number, page 192, we said, in answer to a correspondent—"Be assured that the artificial manure you refer to is no better than you could make from your own water-closets, mixed with water and applied in a weak liquid form. This home-manufacture is not appreciated as it will be, ere long, and as it is appreciated by the Chinese."

This opinion was not the offspring of the moment, but is founded upon observation, upon actual experiment, and upon the experience for ages of the whole Chinese empire. Dried cakes of manure manufactured from house sewage are exchangeable for goods in the Chinese markets, for the people are all, in some degree, cultivators of the soil; and in the cities, such of the inhabitants as have no gardens, sell the daily manure produced by their households, with a facility and at a price which competition and a knowledge of its true value will secure for any home production.

Of the value of house sewage we speak from actual experiment and observation, because we have seen it for years employed with marvellous results to grass, and to Asparagus-beds, by Cuthbert W. Johnson, Esq., at Waldronhurst, near Croydon; and because we have tried it ourselves with similar advantage to all crops which come under the care of the gardener. Among others, we have no doubt that it was the chief cause of superiority in some Pompono Chrysanthemums, one of which, *Sacramento*, had very nearly 700 blooms on a single plant, and which, at the time this is written, December 7th, is still a mass of yellow bloom in a conservatory.

There is little or no difficulty in applying house sewage as a manure. In the instances immediately under our own knowledge, the sinks and water-closets all communicate by means of a main drain, with a water-tight well sunk in the ground at a distance from the house, and capable of containing some thousands of gallons. From this well it is pumped as needed. If it is to be applied to ground about to be dug for the Cabbageworts, it is put on without any diluting, at the rate of a pailful to about six square yards. If it is to be used for watering plants, one bucket of sewage to three buckets of water is quite strong enough.

Short as is the time since we gave the answer at page 192, yet have we received more than one enquiry as to how we would "prepare a dry manure from the house sewage?"

The process is very simple. Add a quarter-of-a-pound

of oil of vitriol (Sulphuric Acid) to every bucket-full of sewage. The sewage should be from the water-closets only. Mix the sewage so acidulated with as much of coal-ashes, or of dry earth, as will soak it well up, and yet be handable without wetting the hand. Mix a quarter-of-a-peck of Super-phosphate of Lime with each bushel of the sewage ashes, or sewage earth, and you will then have as powerful a manure as almost any of those advertised as artificial manures. Keep it in a dry shed, and put in the drills with the seed, or with plants in a circle round each, and covered with an inch of soil.

To demonstrate, from actual recent chemical research, how closely the best components of house sewage approach to Guano, one of the richest of manures, we will conclude by quoting the following analyses made by Professor Way, and for which analyses we are indebted to Johnson and Shaw's "Farmer's Almanack."

	URINE.	FÆOES.	GUANO.
Organic matter and salts of ammonia	67.54	88.52	52.61
Insoluble siliceous matter	.90	1.48	1.54
Oxide of iron	.50	.54	
Lime	.60	1.72	
Magnesia	.47	1.55	24.12
Phosphoric acid	4.66	4.27	
Sulphuric acid	.46	.24	
Potash	1.83	1.19	
Soda	—	31	
Chloride of potassium	5.31	—	8.64
Chloride of sodium (common salt)	18.88	18	

THE *Pomological Society* held its monthly Meeting on the 4th instant, at its Rooms, No 20, Bedford-street, Covent Garden. Ten new members were elected, and collections of Apples, chiefly from the cider districts, were exhibited. The exhibitions of such collections are of the greatest utility; for they furnish the means not only of securing to the specimens their correct names, but of enabling the Society to report on the influence of soil and situation over each variety. When the first number of the Society's Transactions appears, which, we are informed, will be in January, the practical benefits derivable from such exhibitions, and of such a Society, will be apparent.

We shall not enter into details of what took place, because we think that these should be first made public

through the Society's own records; but we must notice, that one of the Apples from Herefordshire, the *Flanders Pippin*, was decidedly the best dessert Apple exhibited. We may go further; for we think it among the very best dessert fruits now in season. We more especially notice it, because in Hogg's "British Pomology," the only work in which it is described, the author mentions it as "a culinary Apple of second-rate quality." In Herefordshire, the climate, or the soil, or both, had given to it the improvement we notice.

The following is the description given in the "British Pomology:"—

"Fruit, medium sized, three inches wide, and two-and-a-quarter high; oblate, and marked on the sides with ten distinct angles, five of which are more prominent than the others. Skin, pale green, changing to pale greenish-yellow as it ripens, and occasionally tinged with a cloud of thin dull red on the side exposed to the sun, and thinly strewed with a few dots. Eye, closed, with long and downy segments, set in a narrow and ribbed basin. Stalk, from half-an-inch to an inch in length, slender, and inserted in a deep funnel-shaped cavity, which is lined with russet. Flesh, white, tender, and marrowy, juicy, and briskly flavoured.

"A culinary apple of second rate quality; in use during October and November.

"It is much grown in the Berkshiro orchards."

Among other communications elicited by the publication of "Poultry Characteristics," we have received the following from a friend, experienced both as a breeder and a judge:—"I agree with you that there must be an uniform standard of properties. In framing such a standard, however, we should do well to follow the example of the florists, who point out what flowers *ought to be*, to be perfect; not what had hitherto been obtained. In very many instances they have succeeded, and worked up to this standard; but the poultry-breeder is without any such guide; and not only that, but there even exists an actual difference of opinion as to what should be called perfection." Although the cases here quoted may not be exactly parallel, since a wider deviation, in the case of cultivating flowers from the natural wild type might be desirable than would be permitted with fowls—the observation contains much that may profitably be remembered by the poultry-breeder, and that would enter into the compilation of a general standard of excellence.

We now resume our subject with the points of GAME FOWLS.

BLACK-BREASTED. — *Plumage.* — *Cock*: hackle and saddle from light chesnut to orange-red; back deeper shades of the same; breast, tail (which is ample), and under part of the body, black; greater wing-coverts steel-blue; primaries bay. The presence of white in the tail-feathers objectionable, though not held as an absolute disqualification. *Hen*: Very light-brown, with a rosy tint on the breast; tail black. Feathers, in both sexes, very hard and firm.

Form.—*Cock*: head long, but fine; bill curved and strong; comb single, and with face and wattles bright red; eye large and brilliant; breast well-developed; back short, and broad between the shoulders, but tapering to the tail; thigh muscular, but short in comparison with the shank; spur low; foot flat, with powerful claws; carriage erect, denoting extreme confidence.

We are aware of pure-bred Game Fowls with rose-combs; but, since, whether clubbed or not, such a formation of that feature is evidently objectionable, on account of the injuries likely to be thus received, we would always require these birds to have the single comb; though we cannot see why its presence in its natural form should disqualify—although it would, doubtless, be wiser policy to club.

The figure of the *Hen* should exhibit the general features described above, on a reduced scale; the comb being small and fine, and with the face and wattles of a somewhat less intense colour. Colour of the leg, in both sexes, white, yellow, olive, or blue; but always uniform in the pen. The "Derby" red to be white-legged. Figure, in both sexes, to combine symmetry, power, and activity.

Weight.—*Cock* not to be under 4½ lbs., nor the *Hen* less than 3½ lbs.

OTHER "REDS." — Male birds with streaked or mottled breasts; with Hens of a dusky hue; marked with more or less of dull yellow on the hackle and wing. Colour, in both sexes, of less brilliancy than with the Black-breasted birds. Comb of the *Hen* dark.

Figure and size in these, and those following, to be as in the Black-breasted.

DUCK-WINGS.—*Cock*: black, or mottle-breasted; the former being preferable; hackle and saddle from white to straw-colour; back and shoulders a light but rich brown, or maroon; tail black; greater wing-coverts steel-blue, forming a wide bar. *Hen*: silver-grey, light in hackle, with a reddish tinge on the breast.

PILES.—Markings irregular; the ground-colour being always white, splashed with chesnut and red of various shades. These colours are usually much fainter in the Hens.

BLACKS.—Uniform in colour.

BRASSY-WINGED.—Black, with yellow on the lesser wing-coverts. The Furness breed, black, with rich golden saddle-feathers; these last now very uncommon.

The **BLUES** and **DUNS**, of various shades of these colours, often with orange or yellow markings on the hackle, saddle, and wing.

WHITE.—Uniform colour, and to have white legs.

BIRCHEN-YELLOW.—*Cock*: hackle, back, and saddle, dark straw, lightly marked with black: full black tail; breast cream-coloured, lightly mottled with reddish-brown: wing-coverts and primaries the same, but tipped with chocolate. *Hen*: greyish brown, with irregular dark markings of a deeper tone of the same colour; hackle and breast, with the shaft and margin of the feathers of a dull white.

Besides those already enumerated, there are, doubtless,

Game Fowls, of pure blood, with plumage that prevents their being placed under any of the above heads. Colours and markings must, indeed, be permitted to have a somewhat wide range in these birds; and figure, with courage, may be appealed to in evidence of purity called in question on the former account.

Thus, there are "Cuckoo-marked" Game Fowls, for which a pure ancestry is claimed, though they seldom appear to advantage; and we have seen good-looking black-and-white mottled birds, where the former colour took the place of the red, or yellow, in the "Piles." Very possibly, too, other additions to the list may be required; but those now described comprise all the generally-recognised sub-varieties.

A heavy Cinnamon breed is not uncommon, with the cocks hen-tailed; but, if this latter feature is disliked in the Golden-spangled Hamburgh, where its presence might call for toleration on account of the superior markings by which it is usually accompanied, it is still more objectionable in the Game Fowl, where no such advantage is gained, and so bad a substitute presented for the ample sickled tail that harmonises so well with the figure and carriage of the breed.—W.

THE December Meeting of the *Entomological Society* was held on the 4th instant, H. Newman, Esq., in the Chair; and was very fully attended.

A list of donations to the library, received since the last meeting, was read by the Secretary; after which the President exhibited a remarkable specimen of *Papilio Cardamines*, the common Orange-tipped Butterfly, the upper surface of the wings of which, as well as the antennæ and abdomen, agreed entirely with those of ordinary females; but, on the under surface, the fore wings on the right side of the body exhibited the orange spot of the males.

A number of Photographic pictures, containing highly-magnified representations of various parts of insects, was exhibited by Mr. Pretsch, director of the Imperial Printing Establishment at Vienna; by whom the process of producing the photographs was explained, and by whom, also, a number of beautiful preparations of Entomological objects, as subjects for the microscope, was also exhibited.

Mr. Westwood stated, that he had received a number of Entomological subjects, beautifully mounted as microscopical slides, from Mr. Menzel, of Zurich, in Switzerland, who had established a microscopical emporium for the supply of such objects. He also stated, that the French photographers had commenced the publication of a work containing figures of various Zoological objects represented by photography; but that the details of the insects (such as the joints of the tarsi, &c.), were not sufficiently distinct; as appeared also to be the case with the Vienna photographs. Mr. Curtis bore witness to the great value of this process for obtaining absolutely correct representations of some particular kind of objects, such as the veining of the wings, &c.

Mr. Pickersgill exhibited a beautiful specimen of the Queen of Spain Fritillary (*Argynnis Lathonia*), captured at Eastbourne, in July; and also a curious variety of *Vanessa Urticeæ*, the common Tortoise-shell Butterfly, in which the dark colour of the upper surface of the wings was much more suffused than on the ordinary examples of the species.

Mr. Stainton read a letter from a friend, relative to the galls of *Cynips Quercus Petioli*, exhibited at the last Meeting, stating that the writer had observed them for twenty years past, and had used them for manufacturing ink for his own use. Mr. Curtis added, that he had learned, since the last Meeting, that the development of the galls prevented the production of the Acorn, the eggs being laid in the place of the growth of the Acorns.

Mr. W. W. Saunders exhibited an interesting Nidus, attached to plants received from the river Amazon, of a patelliform shape, filled with eggs, and with an operculum, and which he believed to be the nest of a species of Spider.

Mr. Samuel Stevens exhibited a piece of the stem of a wild Cherry-tree, bored into in several places by a larva, apparently of the beautiful Beetle, *Trichius nobilis*; specimens also of the *Helops cæruleus* were also found on the decayed parts of the stem. The tree had been entirely destroyed by the ravages of these insects.

Mr. Tweedy exhibited a case of beautiful insects, just received from the island of St. Domingo.

Mr. Westwood exhibited a small skein of the silk of the *Saturnia Cynthia*, reared, and at length spun, from the cocoons in the island of Malta, and which had been forwarded to him by the Governor of that island, through Dr. Templeton. Brigadier Hearsey stated, that this kind of silk was of great strength, and much used in India, and that it was chiefly grown in the eastern parts of India; and Mr. Douglas read an extract from the "Journal of the Society of Arts," stating that the cocoons had also been successfully unwound at Turin, where the larvæ had been found to thrive well upon Willow and Lettuce leaves, in lieu of the *Palma Christi*, their ordinary food. Mr. Westwood also stated, that he had received from the Governor of Malta a quantity of the cocoons of the *Cynthia* Moth, and that, as notwithstanding the cold to which they had been subjected the chrysalides were found alive within the cocoons, he trusted to be able to rear this fine Indian insect in this country.

Mr. Westwood also stated, that a beautiful specimen of the extremely rare *Papilio antenor* had recently been obtained by the British Museum, from Madagascar, thus determining the locality of this species, which had been the subject of doubt and controversy.

Mr. Curtis read a short paper, containing a summary of the different kinds of insects reared by him, from time to time, from the leaves and flowers of different kinds of wild plants; also a note, by the Rev. Mr. Keeper, on the habits and larvæ of *Elatér* (*Otenicerus*) *castaneus*; and Mr. Frederick Smith read a monograph of the British species of *Formicidæ*, or Ants, of which

he had determined twenty-eight distinct species, seventeen only being contained in Mr. Stephen's "Systematic Catalogue of British Insects." Of these twenty-eight species, eight belonged to the genus *Formica*; two to the new genus *Tapenoma*, of Forster; one to *Ponera*; fourteen to *Myrmica*; one to *Myrmecina*, of Curtis; and two to *Stenamma*. Mr. Smith also gave some accounts of the habits of the different species.

BULB-FORCING.

THE production of first-rate Hyacinths, Narcissi, Tulips, Crocuses, &c., in the end of December, and through the month of January, is one of the little niceties which pertain to the art of gardening; and certainly, amongst all the flowers which are available for enlivening the dreary winter months, we have no one group, or family, which possesses greater popularity in their combination of colour, scent, and other adaptabilities. The production of fine blossoms in March and April is a very easy affair, as we all know that in our borders they spring naturally at that period.

It has long since been observed, in these pages, that to begin at the beginning, we should procure bulbs as early as possible, and a great fact it is, as connected with their early forcing. Our readers, in the main, of course know that many of these things are imported from Holland annually, and, doubtless, some have been astonished at the fact, especially those who fancy that British gardeners can accomplish anything possible in their art; and, indeed, with the requisite appliances, doubtless, they can. We all know that the Dutch climate is somewhat peculiar, and the same, in degree, may be said of the soil in which the bulbs are cultivated. Notwithstanding all this, however, it does seem strange, seeing the difficulties which have been overcome in the culture of such things as Orchids,—the formal culture of which was, at one time, deemed almost impossible,—that much bolder attempts have not been made to rival the Dutch in this their favourite hobby. We have been given to understand, that the soil in which they grow about Haarlem, or other places, noted for their successful culture, is a dark, loose, and sandy earth, and that it is no uncommon thing to meet with much extra moisture, of a tolerably permanent character, at not very many inches below the surface. And, in addition, that some of these soils are so loose, as to require a coating of cow or other manure, on the surface, to prevent them from blowing away by the winds, when they are in a dry, and, of course, loose condition. Now, it is certain that we have very similar conditions of soil, in both England, Scotland, and Ireland, but we have a more difficult case, by far, to grapple with, when we come to the question of atmosphere. We can much easier make special conditions of soil, than control, or, shall we say create, an atmosphere of so special a character. Here, then, the chief point of the question would seem to rest; but, after all, those who are to "push us off our stools," need not be surprised if they should fairly overcome these difficulties, long before the present century has passed. It has always occurred to me, when in a speculative mood, that the experiment would have the best chance in Ireland; but about this I will say no more, merely throwing out the hint.

I would here, however, suggest to the readers of THE COTTAGE GARDENER, that it will not be prudent for the British bulb-importers to run too keen a race as to hurrying the importations; such may possibly end in so far hurrying the Dutch growers, as to induce them to

take up bulbs before they are ripe; and this would end in imperfect developments and poverty of display.

It may be taken for granted, as the first step in bulb-forcing, that he who has the finest potful of roots before the bulb begins to shoot upwards, other things being equal, has laid the best foundation for a good bloom. I speak, now, chiefly with regard to Hyacinths; but the principle will doubtless apply, with greater or less force, to most of our bulbs. They will not only bear, but enjoy, a bottom-warmth, if judiciously applied; and the period at which to subject them to it, in my opinion, is when the pot or glass is at least half-filled with roots, and the bud has sprouted an inch or more. They will enjoy a bottom-warmth, at that period, of 60° to 70°, not more. My practice has been to select the front of a brick pit, which has been recently furnished with fermenting materials; two parts tree-leaves, with one part dung, duly prepared before being put in the pit; such, about four feet in depth, produces a permanent bottom-warmth of about 70°. At the front, or south margin of this pit, a board is first placed as a flat shelf, resting on the fermenting materials, and the bulbs are set on this board, to prevent their roots getting into the fermenting material; the pots are then covered three inches with very fine, old tan; thus, the crowns are three inches below the surface. As soon as planted, a strip of matting is tacked over them, to insure a comparative darkness. Being in the condition I before adverted to, viz., a pot nearly full of roots, and the buds already advanced about two inches, they come forward with singular rapidity, whether Hyacinths, the Narcissi, Tulips, Crocuses, &c., and the success is so complete, that nothing more appears desirable.

In about a fortnight, or a little more, many will be thrusting their heads through the soil, and as soon as this is the case, the old tan is instantly drawn away from their stems; this is important, for if left thus many days, they become drawn and weakened. Means, too, must be taken to inure them gradually to the light, as also to gradually cool down the roots; for they will have to leave the pit, and submit to a lower degree of warmth at the root.

Here it may be observed, concerning the Hyacinth, that different kinds evince different habits, from the moment they emerge from the tan covering; some will possess a central blossom-spike so thoroughly enveloped in a sheath of foliage as to prevent the truss from being seen until the stem is nearly four inches high; others will develop the point of the truss almost before a leaf appears. Now, this is not alone on account of kind,—the previous condition of the bulb in its own country has something to do in the affair: the latter, however, we can little influence. It must be remembered, in all these cases, by the beginner in bulb-forcing, that the influence of light incites to speedy development; of darkness, to elongation, and, of course, protracted development. The bulb-forcer, therefore, must look well to the character of his roots when in the act of development; and he will find it requisite to place them in two sections distinguished by their degrees of light.

I may here remark on moisture as it concerns these bulbs; and may point to air-moisture and root-moisture. It will be found, I believe, that the more humid the atmosphere in which the development of the truss and foliage takes place, the more the plant will enlarge in foliage; and *vice versa*. So, that since, as our florists tell us, much of the beauty of a Hyacinth depends on the strength and proportion of the truss, and the distance which the bells, or pips, are from each other, the beginner may learn from hence that it is in his power so to modify heat, moisture, and light, as to make the rising truss and foliage bend, in a high degree, to his will.

But what of root-moisture? If Hyacinths are potted

in a soil tolerably moist at the first, and instantly plunged over-head in damp coal-ashes—than which nothing is better—they will scarcely require a drop of water until the pot is three parts full of fibres; indeed, none until they are introduced to heat; but the pots out-of-doors must be covered nearly six inches deep in the ashes.

When in blossom, or opening, they require liberal waterings, and enjoy weak and clear liquid-manure; and care must be taken to apply as much water as will fairly moisten the soil all through.

The Narcissi consume much water, especially when three in a pot, as they ought to be. Crocuses, also; and, since the latter have been brought to such a high degree of excellence, they form—simple as they are—an excellent adjunct to decorative flowers in the dreary months of December and January.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—DECEMBER 5TH.

ALTHOUGH a rough, windy morning, and a wet afternoon, yet the room was pretty full of visitors; the large and small *Chrysanthemums* made the greatest show of flowers; but there were some very good grown plants on the table, and some interesting modes of training, and the *ne plus ultra* pots of China-ware and crystal-glass. We can now grow our pet plants for the mantle-piece in glass tumblers, or in glass anything, with an escape-hole in the bottom, after the manner of the old garden pots.

Magnificent Grapes, very good Pine-Apples, and good dessert Apples; most noble Pears, and plenty of them, and Pears which were not worth looking at. I shall not mention names to-day, but I must remark, that people should not attempt to send Pears to London until they have learned the art of packing them. A poor widow woman, who keeps an "Apple-stall" at the corner of Grub-street, might be excused for a little bruise, here and there, on her fruit; but if she were to take, as a gift, nine-tenths of the Pears and Apples which were sent to the first Meeting of the Pomological Society, and full fifty kinds of Pears at our meeting, to-day, from *one county*, the police would take her to "the station" for vending unwholesome fruit.

I often think it is "hard fate" not to tell a man, who may be hundreds of miles off, why his things did not get a prize at this or that show, or meeting; and a great deal of misunderstanding and ill-feeling, to my own knowledge, are thus engendered and kept alive against Pomological and Metropolitan Societies for the encouragement of garden pursuits. Beautiful Pears, and delicious, no doubt, if one could stomach them, were so knocked about in their travels, through bad packing, that they looked black and blue and bruised, and fit for nothing else than the hog-tub; their owner, all the while, expecting to hear of a prize for them by the next post. Then, because the prize never came, nor the reason why, the exhibitor brews and broods, at home; tales and tattles supply the yeast; and fermentation, sooner or later, boils over the heads and ears of the Pomological, the Horticultural, and the Floricultural Societies; and all this, for the want of telling him, in plain English, that his plants, or fruits, were not packed right. *Good packing* is as difficult to learn as good gardening; and bad packing spoils good gardening, good tempers, and turns reporters into critics, at the risk of displeasing both parties. If I had been a good packer, I should have joined the Pomological at once, and teach people the art as well as I could. As it is, however, all I can do is to tell the truth, not caring how it may tell for the present moment.

POMPONE-CHRYSANTHEMUMS.—I shall begin with them, as they were the prettiest. I have a large dish of cut flowers of many kinds now on the table. They are stuck in wet sand, and look extremely nice: some on long stalks, some on short, and some on middle-sized stalks. The shortest stalk is four inches long; two of which are out of the sand. I am thus particular, because I believe this is the best way to show them off in cut flowers; and I have only to shake the table, as gently as I choose, and they are all on the move, like painted fairies—and such beauties! They did not appear to me to be half so gay in the room in Regent Street, and on the plants. Some of them are as *fickle* as French fairies in their shades of colour—now of this tint, and then of that—peach, pink, French-white, blush-white, and white all over, are some of the degrees in the virgin class; while brown-stout, snuffy-brown, foxy-brown, buff, fallow-buff, buffish, and real buff, with lemon, orange, and citron yellows, and yellows of no name, up to canary and fawn-yellow, run through the buff and yellow sorts, at different stages of the same flower; and also according to the ways a given kind may have been grown. I had to learn all this, as well as the names, this autumn.

Before *Pompones* were introduced into the eastern counties, I was turning inside-out of the garden, and so missed them on their first appearance. It was not till this season that I could devote the necessary time for studying them properly. I have now eighteen of the best sorts for myself: but I shall call mine *Michaelmas Daisies*. The only good Catalogue I have of them, where they are well described, is that of 1853, by Edward G. Henderson and Son, Wellington Road Nursery, St. John's Wood, London. This is a carefully got up catalogue, in which the foreign names are properly spelled—a great treat to us here, as the foreign florists' names are much more difficult to know, what they are, or what they mean, than the language of botany. From these sources, and from my nearness to London, where one can see them every day of the season, I am now well up in the fancy; and having taken a great fancy to them myself, I want to inoculate the taste to the farthest extremities of the three kingdoms, and as far beyond as we can push it.

The first prize for *Pompones* was taken by Mr. Robertson, gardener to J. Simpson, Esq., Thames Bank, Pimlico, and Surbiton; for we get all the best men from London to come down here. Mr. Robertson had eight or nine *Pompones*, and two large kinds.—*Annie Salter*, the best of all the yellows, and *Fleur de Marie*, the clearest white of those called Anemone-flowered. This kind requires good management to fill up well in the centre, and keep off the bull's eye; but nothing of the sort was to be seen in these flowers. His *Pompones* were *Ashmodie*, a reddish-brown outside, and the centre opening of a clear yellow. *Bijou de l'Horticulteur*, a fine, large, creamy-white flower, with a tinge of blush all over it. *Colobri*, (but is it not *Colibri*?) a very fine large *trusser*, showing four full blooms in each head; orange-buff round the outside, and the centre a good brown-yellow; this flower is now in my hand, as are all the rest of them before me. *Daphne*, a dark purple, with a tassel of quilled flowerets in the eye; a fine kind. *Drine Drine*, another large *trusser*, having four or five blooms in a head, and all of the clearest lemon-yellow; a capital sort, and keeps a long time in perfection. *La Gitana*, a changeable kind; nearly pure white, when full blown; but at first opening, and at dying off, it has a blush tinge all over it. My own flowers of it, from the open air, are regularly tipped with cherry. *Model*, another changeable kind, white and blush. *Nelly*, a still more changeable kind, and varies much in the shape of the flower as well. I have it as round as a Bachelor's Button, and as flat and large

as a half-crown piece; white, creamy-white, and tinged with a black. *Nelly* is, indeed, a fine kind, and *Mignonette* one of the dwarfiest, the stiffest, and most profuse bloomers; the blooms small, and of the same colour as the anthers of the *Mignonette*; hence the name. All these averaged twenty inches in height above the pot, and about the same across the flowering parts; but there was more than one plant in a pot.

There was a collection of six or eight from the Garden of the Society, as good as could be grown anywhere. The kinds were *Aramis*, a deep rose with a lilac-coloured eye, one of the best; *Daphne*, same as above; *Criterion*, a clear yellow; *Graziella*, a fine, large, light flower, with a tinge of *pudibundus*, or bashfulness, all over it; and *Madame Lemichez*, the nearest to peach-blossom of all I have seen—a most showy kind as a Daisy. Among the large kinds in this lot were *Madame Camerson*, a reddish, or foxy-brown; *Sanguineum*, a large, flat, rose flower, with a bulls-eye, but very showy; and *Wheeler's Incurred Pink*, a large, deep, pinky, flat flower, and also with the bulls-eye Daisy-look in the centre.

A *Begonia incarnata*, from the Garden of the Society, was four feet high, and wide in proportion, blooming over the edge of the pot; yet many gardeners call this a "lanky" kind. I never saw it so well grown before; but this Society "do" the *Begonias* better than most folks. They turn them out-of-doors in the height of summer, and let them get as dry as bricks; one would think, to see them, the plants would never come round again; but they do come about, and pay well for the change and rest.

The old *Lium tigrinum* was also there, from the Garden of the Society, and covered with large yellow flowers. This, and the Black-eyed Susan plants (*Thunbergias*), are the most curious I know, with respect to the suitable climate. This one before us will be kept in the stove till next April, then to be cut in as close as ever a Geranium was, and after starting, will be shaken out and repotted, and, by the end of May, I know not how the Society do, but I used to plant it out-of-doors, in soil and site fit for Cucumbers, and leave it there till September. If the roots were good, and of the proper age, the shoots would cover from thirty inches to three feet and upwards, in one summer; and after taking up and being potted, the stove is the best place to force all the bloom out of all this succulency; but I had it on a conservatory-wall for years, where the sun could not touch it after breakfast, where it bloomed but moderately. It will not stand a south wall, for red spider.

A fine specimen of the Artillery plant was here again, *Pilea muscosa*; and a fine-bloomed specimen of the new species of *Calceolaria ericifolia*. This is a good winter-flowering *Calceolaria*, with sulphur-yellow flowers, not unlike the old *bicolor*; the stems get woody and bush-like, and the leaves are small, and not unlike those of *Alona celestis*.

Also, a *Goldfussia isophylla*, covered with light lilac flowers. This is one of the best plants in the catalogue to make a specimen, if it is lot alone.

Mr. Fleming sent a Dragon-plant, *Dracaena terminalis*, eighteen inches high, and full of leaves, in a No. 32-glass pot, with a good rim to it, and a hole at the bottom, in the usual way. There never was a Dragon-plant more at home, or more fitted for a warm corner in the drawing-room, till the ladies get tired of seeing it.

Mr. Forsyth was the first who proved hardware to be as good for plants as the softest pots; then Mr. Beck brought out slate pots and tubs; after that, I introduced zinc linings into soft vases for plants, to save the vases; and now Mr. Fleming crowns the roost, as clear as crystal.

The master-plant of the day was a specimen, in a sea-green China pot, from Mr. Fleming, with a

monstrous long name, and a dangerous name to pronounce, *Sericographis Gheisbreghtiana*; here were twenty-eight or thirty flowering-spikes on this plant, and each of them with several racemes of very crimson, *Justicia*-like flowers; a most noble plant, made out of a rather lanky customer, by putting so many plants in the new China pot.

A good specimen was shown of *Gesnera zebrina*, or, rather, the plain green variety of it, called *Herbertii*, from the Society's collection.

There was a large specimen plant, of a new kind to the shows, but not quite new to gardeners, from the Pine-Apple-Place Nursery, and called *Hebeclinium aurantiacum*. This is a soft-wooded Composite, of straggling and rampant growth; but if managed as this was, by training the long shoots round and round, and over each other, and back again and again, then round again, and up and down, and crossways, until the thing is tired out, it will produce flowers all over the mass, and bloom in winter for two months or more, just like a small Orange *Zinnia*. It is believed to be a Mexican plant, of the easiest culture, and when it is proved to be such a long bloomer in winter, some one will find out a way of managing it with less trouble, less growth, and less room; then, it will be a good addition to a scarce class of plants.

I have not pomological patience enough to go through all the fruit, or any part of it. I spent an hour in Covent Garden, and I looked in to see and hear the fowls at Mr. Stevens's rooms. I saw him in the market, had a chat about fowls, but I could not stop to see the prices, as I am now more pressed for time in Regent-street, owing to the new Pomological Society, and for fear they should get ahead of me and my notes.

D. BEATON.

CHRYSANTHEMUMS NOT FLOWERING, AND THEIR CULTURE.

"I ENDEAVOURED to follow out the instructions, so copiously given, as to the management of these great favourites, at this season of the year; and by proper stopping, &c., I have got beautiful compact bushes, but very few flowers. What is the reason?" I struck cuttings of the Pompones in April, potted off, and then put them in other pots; but the flowers are not so fine as I wish, and the plants, though every care has been taken of them, are perfect Lilliputs in size compared to those we read about as exhibited at the various Societies. Cannot you give us a wrinkle?"

"The Chrysanthemum is a thorough cottage flower. In most parts of England, many kinds are never more at home than adorning the walls of a cottage, with the roof, thatch, or otherwise, projecting far enough to throw the heavy rains past them. Inside windows it is equally at home, and, I believe, would be more prevalent there, were it not that you great gardeners, in all your notices and treatises, treat first of the propagation, and that is always done in a gentle hotbed, or under a hand-glass in the open air, while myriads who love this flower, and would be proud to grow it, have nothing of such conveniences; and for them you should mention the most homely and easy modes of treatment."

These are a sample of the inquiries and the complaints that reach me; and I will do my best to meet them in a few words. If our friends would look over the "indices" of previous volumes, they would find that considerable space has been devoted to the lovers of flowers, who have little of a garden besides the walls of their domicile, and the windows and balconies it may contain; though, in their case, the advantage of some receptacle, however rough, for protecting, advancing,

or retarding plants, has been referred to. I have long ceased to feel surprise that the love of flowers is anything but proportioned to the means enjoyed for the gratification of such a taste for the beautiful. Many a time have visits been paid to me, and inquiries been made in passing, as to the growing and keeping of some plant, that in a gardener's eye was of little importance, though the plant was more than interesting to its possessor; either from a warm appreciation of its peculiar beauties, so fully investigated; or from some charms, hidden to all but the possessor, entwined and associated with it; and if, more than at any other time, I have felt humbled in my deficiencies as respects professional lore, it was when finding that some of the questions, seemingly very simple, were beyond my powers of answering.

At one time, to a great extent, and until the present year, I have always, to a limited extent, grown these beautiful flowers, and have tried, with satisfactory results, many modes of doing so. A short description of some of those may meet those and other cases; merely promising, in answer to No. 1, that he had kept stopping his shoots too late; to No. 2, that, in all likelihood, he had exposed his pots too much to the sun, and to drenchings and draughts alternately; and to No. 3, that suckers, and dividing an old stool, or, if small, thinning it out, and growing it on, will yield results often superior to fresh propagating from cuttings every year.

It is too late to give any instructions as to managing the flowers for this season. These will, generally, be on the wane before this is read; but a few words may be of use, as to the treatment of the old plants in pots. Until it has been satisfactorily proved to the contrary, we would treat the *Pompones* as a little more tender than the older and the larger kinds. Both of them will bear a considerable amount of frost uninjured, if they have not been made tender, by the young suckers being allowed to grow to any size in-doors; more especially, if the pots are plunged, and the soil kept rather dry. Whatever the future mode of growing resolved upon, as soon as the old stems are cut down, the loss the young shoots grow, until spring, the better. A cold pit, with plenty of air, unless in severe weather, and the glass protected only then, would be a first-rate place for them; and, unless in extreme cases, they will there absorb sufficient moisture without any waterings. Failing that, any dry, sheltered place, where a little protection may be given them from severe cold, or very wet weather, will be the next best position. As a protection alike against frost, slugs, and worms, the plants should, if convenient, be plunged in, and the surface of the soil be slightly covered with coal-ashes. Do everything to keep the plants from danger, and yet to discourage growth during winter; and by March and April you will have firm, stubby shoots, two or three inches in length, instead of longer, soft, and spongy ones; and this stubby commencement will tell greatly on the health and the strength of the plant, whatever the mode of growth adopted. The north side of a wall, or hedge, is, perhaps, the best position, next to a cold pit, and of these two, I would prefer the hedge; because, when necessary to give a little protection on the north side, there would be a circulation of air through the hedge on the south side. These are trivial matters, but attention to minutiae lays the ground-work of ultimate success.

Gardeners, in general, prefer raising their plants from cuttings every year, and when properly done, they are more free from suckers than those grown from dividing the plants, and, in general, are more fully under control, though requiring more care. Although properly drained and prepared pots for cuttings are always an advantage, yet no great nicety is requisite for striking *Chrysanthemums*. I have frequently put a piece of tile over the

bottom of the pot, put a good handful of half-decayed leaves over it, filled the pot with light sandy soil, then filled it with cuttings, inserted it in a hotbed, 75° at bottom, and 55° at top, and before a fortnight the pot was crammed with roots. I will now glance at some of the modes adopted.

1. Being anxious to obtain some large symmetrical plants, firm cuttings were taken off in the first week of March, about three inches in length; each was cut across at a joint at its base, the leaf there, and each one for half the length of the cutting, was removed, and the small incipient bud, hardly to be seen in its axil, picked out with the point of a penknife, that shoots and suckers should not so easily come from underneath. As soon as inserted, they were placed in a hotbed; when struck they were potted in 60's. As soon as the roots got near the sides of the pot, the plants had the one shoot stopped; when full of roots were again potted, using rich, light soil; more air was given to harden them off by degrees. Meanwhile, a quantity of half-decayed loaves, stored in a good position, a little dung, and the mowings from the lawn, mixed with this, but the leaves kept at the top, gave the mass, in the middle of May, a nice bottom-heat. In this the pots were plunged, protected, and screened, for a short time, with spruce branches, and by the end of the month, as there were generally about three strongish shoots, and a couple of weaker ones to each plant, the stronger ones were stopped back, to furnish two or three each, and if deemed necessary, were tied down, to make them break freely. This generally gave a plant with eight, nine, or more shoots, the centre ones being rather the strongest, but not robbing the others. When growing freely, they were repotted and replunged, and the chief things in their management were, to stand thin enough to have air all round and amongst them; never to know the want of water; never to lose a ray of sunshine; and after the stems were freely growing, to pick out incipient shoots from the axils of the leaves, until from six to nine inches of the point. These plants showed bloom early, and fine flowers they were. Many were in eight, and some in twelve-inch pots. Though kept plunged, there was no extra bottom-heat after the beginning of July; there had been no stopping of the shoots after the beginning of June; the plants were twisted round halfway at a time, every few days, for the double purpose of preventing any rooting in the leaves to speak of, and to give each part of the plant an equal amount of sunlight; and after the last potting, and the roots were catching the sides of the pot, not only were weak manure-waterings frequently given, but also frequent mulchings of sheep and cow-dung, a year old, were laid on the surface of the pots.

2. A second batch of cuttings were inserted about the middle of April, and treated in every respect the same, and did well, though the foliage was not quite so fine, and the plants were not so large. In order to make these latter plants as large as the first-struck, a few had their shoots stopped at the end of June, and the first week in July, but the flowers of the former were not equal to those stopped earlier; and in the case of the latter, many did not form buds at all, while others that did so never opened, or only in a deformed state.

3. On other occasions, I have inserted cuttings in April, potted off, and kept in a close, cold pit, or in a cool hotbed, stopped, and, perhaps, bent the shoots to make them break freely, and by the middle of June, plunged them in six-inch pots in an open quarter of the garden, or in front of a fence, giving them the necessary tying, waterings and prunings, and mulchings with rotten dung, &c. These mulchings encouraged surface-rootings, and by the middle of September, or the beginning of October, when these pots were raised, it was found that scarcely any roots had gone out at the

bottom of the pot, but some beauties had run freely over the surface, and these went easily into the larger pot, to which the plant was transferred, and the soil being rich and open, a good proportion being roughish leaf-mould, the plants hardly felt the change, when kept in a shady place for a few days, while the fresh potting gave fullness to the buds and size to the flower.

4. Striking the cuttings under a handlight in the open ground in the middle of April. I used to cover the place intended with an inch or so of clear sand; the soil below being sandy-loam and leaf-mould. The cuttings were generally stopped some time before they were taken off. This caused them to have buds swelling in the axils of the leaves, ready to break into shoots. For this mode, I liked to have the base of the cutting as near to where the surface soil came to as possible, or even a little beneath it, that it might be firm; and, as in the other case, rubbing off the buds, where shoots were not wanted. The handlight merely required shading in very hot days. The cuttings having been stopped at the point before they were made, less time was lost in forming shoots. Some of these I have potted, and then plunged; and others I have planted out in a rich, prepared border, some two-and-a-half feet apart, to be properly trained and fitted in the autumn. The best mode, however, with these, is to have narrow trenches made, as wide as would do for a row of Celery, but not above half the depth; the sides beat firm; and part of the soil nicely incorporated with leaf-mould, and fresh sandy-loam, to fill the trench; and the plants brought from the handlight, and inserted, about two feet apart, will, if duly watered, grow very fast, and after being thinned, disbudded, and stopped for the last time, by the middle of June, will make nice plants, that will rise with nice balls full of fibres, when you wish to pot them, which should be done by the time the flower buds are perceptible. A north aspect, and syringing several times a-day, will keep them from flagging, until they are growing freely; and then a cloudy day should be chosen to put them in a permanent position.

I find that much mistake exists as to stopping a plant when more shoots are wanted. Many suppose, that it merely means nipping out the point of the shoot, as you would do with a small cutting; but this is not the thing meant, when we speak of the final stopping of these plants. For instance, here is a young Chrysanthemum plant that has been early stopped; it has four shoots; two of them are about three or four inches in length, and weak in proportion; one eight inches; another fourteen, and strong in proportion. Now, by merely stopping these two shoots, by nipping the points out, you would throw more strength into the two weak ones; but these stopped shoots will be of no use until they form others, as the plants bloom at the points of the unmutilated shoots. For a symmetrical plant, it is desirable that the shoots should start from points not far apart; but by merely nipping out the point of the stronger shoot, you have no security where the two or three you expect from it will come from; and to equalize such a plant as this, you would require two fresh shoots from the one stem, and three from the other. These strong shoots must, therefore, be cut back nearly to the point, from which secondary shoots are expected; or, what I prefer, in such a case, as giving less of a check to the growing principle of the plant, nip off an inch or so from the point of the shoots, and then tie them down, so as to give a slight strain over the place where you wish the shoots to come from. It will often be necessary to do this with all the shoots when nearly equal in size, because any inequality in their strength may be easily regulated by the number of shoots you finally leave to each. Provided this last stopping is effected early in June, and the plants are well attended to, there will be no danger of having shoots destitute of bloom.

One advantage of giving plants all this labour in growing them from cuttings every year is, that they present a more artistic appearance, as they may be trained as regularly from a short, stout, upright stem, as is done in the case of a Gooseberry or Currant-bush. I have frequently struck cuttings in May and the beginning of June; and from plunging, or planting-out, as soon as struck, I have obtained very fair flowering plants; but if by stopping, I had tried to give such plants an equal number of shoots with those struck six weeks or two months before, I should expect the beauty to consist more in symmetry of form than in plenty of flowers. Every shoot on a plant that is well-grown has had plenty of sun, air, and water, and from four to five months of our best weather to mature itself, will be terminated with a fine bunch of flowers, be there one shoot to a plant, or a dozen, or twenty. I may also add, that in growing in pots, though far from impossible, yet it is very difficult to keep the stems clothed with fine, large leaves to their very bottom, unless the pots are plunged, as well as properly attended to in waterings.

5. *Growing by Suckers and Division, &c.*—These are the modes the humblest cottager can try, and my experience leads me to the conclusion that the results will be little inferior to the modes requiring hand-lights and hotbeds. In most kinds, soon after blooming, if not before, suckers will commence rising from the bottom. If these are very thick, it would be advisable to thin them considerably. In breaking the old ball in the spring, you will find that each of these suckers are rooted to your hand, though the roots are easily injured by exposure to the air. If you manage to get the most of the incipient buds picked out, these will trouble you with few more ground shoots than cuttings. These rooted suckers may either be potted or planted at once in a preparatory bed, where you can shelter them a little from sunshine and cold, by means of a mat, a cloth, or a branch; and, when well rooted, you may either pot, or plant out, as advised for cuttings. Small plants of this autumn, instead of being divided, may have the earth shaken away, the redundant or smaller shoots thinned out, and the plant at once repotted or replanted; all the care required being to train the shoots left, as if they start of an equal strength, they will, generally, remain so. At one time, for a number of years, I had a great deal to do with the Chrysanthemum as an out-door flower, in borders, and against fences, on all aspects. I found that old plants, properly thinned out in the spring, part of the surface-soil removed, fresh loam added, and a good mulching of dung over all, beat, for years, younger plants, treated otherwise alike, that had been raised by cuttings. I also found that divisions or lumps of such old plants, planted without allowing the roots, and especially the surface ones, to get dry, and allowing only the requisite number of shoots to remain, beat, at flowering time, those plants raised either by cuttings, or single-rooted suckers. I also found, that though less artistic and graceful in outline at the base, a small plant thus treated, and grown in a pot, right on, or taken up and potted, after being previously planted in prepared ground on purpose, gave more flowers, with less trouble, than a plant struck as a cutting, and several times stopped, to give it something of the bush shape. My advice to cottage gardeners, who have no glass, and yet wish to have these Chrysanthemums on their walls, and in their windows, is to stop the shoots, little or none, and to content themselves with suckers, and either dividing or thinning the shoots of their older plants; and if, in other respects, they follow the directions given as to the summer treatment, they will have no reason to be disappointed. Towards the end of April will be early enough to repot or replant; and in late springs, the middle of May would do.

6. The *Pompones* I have had less experience with,

but they seem quite as easily managed as the older and larger kinds, and, from their dwarf size, will be very valuable for windows, as most of them that I have seen may be bloomed at from twelve to eighteen inches in height. Very nice little plants may easily be procured from cuttings in spring; but when dense little bushes from a single cutting are wished for, that cutting must get bottom-heat early in April; be kept in a hotbed, the heat decreasing as the days lengthen, until towards the end of May; it will stand the open air, either plunged or planted out, having previously received several stoppings, to secure the necessary number of equal-sized shoots; these being trained out regularly, something in the shape of a half-circle. Our window-gardeners will find they can have very ornamental bushes without all this trouble, by merely shaking the earth from the small plants they now have, next April, repotting or replanting them again, shading until fresh growth is freely taking place, and then thinning out the shoots, or shortening some to produce more according to the circumstances of the case, keeping in mind, that a similar sized pot will carry double the number of shoots of these, that would be desirable in the older, tall-growing kinds.

7. These Lilliput Pompones do away with the objection that many had to Chrysanthemums, as they can be made very symmetrical as a bush, which it was next to impossible to accomplish with the other. I find, however, that dwarf as they are, some would wish to have them dwarfer,—the flowers merely a few inches above the surface, and, therefore, I may add, I have frequently found two modes very useful for securing these little plants. The first, is to take off cuttings of the joints of shoots, just as the buds are forming at the end of August, and insert three of these in a small 60-sized pot, placing the cuttings at equal distances close to the sides, and plunge them, if in a mild hotbed all the better, though beneath a close hand-light will do, syringing and shading to prevent the cuttings flagging. Ere long, roots will be formed, and when the pot is getting full, transfer the cuttings, without disturbing them, to a 48-sized pot, and though giving air, keep them close for a few days; as the pots are getting filled with roots, apply manure-waterings, and the bloom will be of a fair size on very tiny plants.

The other mode has often been referred to. About the same time, lay the points of shoots growing out-of-doors into small pots, plunged in the ground, and take them up when rooted. In layering, you can hardly make a tongue, as you would do with a Carnation, the stems are so brittle. I have done it successfully by two ways. First, by twisting the part to go in the earth, so as to facilitate the protrusion of roots. And, secondly, by splitting the stem, by inserting a sharp-pointed knife through the middle, and carrying it along for an inch or two longitudinally, and placing a chip of wood or so to keep the incision open. This presents a large space of liber and alburnum matter for the protrusion of roots, and there being no cut across the shoot, there is little or less likelihood of its snapping. These modes may often be adopted in layering other things brittle and apt to snap. Lists of the very best sorts have been lately given.

R. FISH.

RHODOLEIA CHAMPIONII.

Captain Champion's Rhodoleia.

If one of the old gardeners, that I knew in my young days, could rise from his grave with all his old notions of gardening and knowledge of plants, and was to walk through a large well-filled greenhouse or stove, he certainly would be not a little astonished, both at the mode of culture, and the great additions made to our

collections of plants. He would find very few of the plants that he knew in cultivation at all. I remember, very vividly, my first master in gardening telling me I knew nothing of plants; and on my modestly saying that I did know a few of them, he asked me what was the name of that tall plant in the corner of the greenhouse, with large, laurel-like leaves (which, by-the-by, rarely flowered). It so happened, that that plant had taken my attention, and I had learned its name, and, therefore, was able to tell him that it was *Justicia Adhatoda*, that it belonged to the Linnæan class Diandra, first order Monogynia; had purple flowers; grew ten feet high, and was a native of Ceylon. So pleased was he with my reply, that he ever afterwards, as long as he lived, was a good friend to me. Now, the knowledge of that plant, and its place in the Linnæan system, I learned from the then best catalogue in existence, namely, "Don's Hortus Cantabrigiensis," a book given to me by a young friend, long since departed this life. At this day, no young man, with a tolerable memory, and an observing mind, and a quick eye, need be ignorant long of any plant that may come under his notice; and to increase the means of his acquiring a knowledge of the names of plants, and the best known mode of cultivating them, Mr. Beaton, Mr. Fish, and, I may venture to add, myself, write every week in *THE COTTAGE GARDENER*, the name, description, and culture of such plants as we know deserve to be grown. We send our papers to our good friend the Editor, and he puts them in order, and, like a good general, places them in battle array, to overcome and disperse the enemies to improvement—ignorance and prejudice.

This week, my attention was drawn to the plant placed at the head of this paper, by a correspondent requesting some information about it. We, I speak in the plural, meaning myself and my two able coadjutors above-named, are always glad to receive, and answer, in full, such inquirers.

The *Rhodoleia Championii* is a plant recently introduced from Hong-Kong in China, where it was found growing in open woods; forming a small evergreen tree, with beautiful, roundish-oval leaves, placed alternately on its green twigs, and of a bright green on the upper surface, and silver-grey beneath. It has not yet, I believe, flowered in this country; but I have seen a drawing of its flowers, in "Van Houtte's Flore de la Jardins de l'Europe," and most lovely they appear. They are a most lively rose-colour; produced in bunches of four or five, at the ends of the shoots. The floral leaves, for they are not a true corolla or flower-cup, but rather a kind of bracts, or, as the botanical term designates them, an involucre, which spreads, when open, from two to two-and-a-half inches wide, enclosing a great number of yellow stamens. There are a double row of leaflets (little leaves), forming the involucre; hence, the flower appears to be semidouble. The leaves of the tree, and its blooms, have a considerable resemblance to a half-double Camellia; but, in reality, it belongs to a different class and order, approaching more to the genus *Pæonia*, which is placed by Linnæus in his thirteenth class Polyandria, second order Digynia, Natural Order Hamalidææ. It is said to flower in its native woods in February, and will, most probably, flower with us in April.

Culture.—Hitherto, on account of its rarity, it has generally been kept in a stove, or intermediate house, where it grows rapidly. No doubt, such treatment has prevented it blooming. Plants now may be had at a moderate price, as it is not difficult to propagate. Having procured a nice, young, healthy plant, sometime in early spring, prepare to give it a shift, by first procuring the right soil. Such a soil as will grow a Camellia will suit it admirably; but, to be more precise,—take some good, fibrous, heath-mould (not bog-earth),

and some decayed, turfy loam and vegetable-mould; mix these in equal parts, but do not sift them—only picking out the large roots, stones, &c., that may be amongst them. Add a liberal proportion of silver sand, and use the compost when neither wet, dry, nor cold; then break a quantity of potsherds into small pieces, reserving one large enough to cover the hole at the bottom of the pot. Lastly, choose a clean, handsome-shaped, not-too-hard-burnt, pot, three inches wider than that the plant is in when you receive it; drain it well, covering the drainage compactly with some small, fibry lumps, picked out of the compost; then place some of the soil upon that, just enough to raise up the old ball nearly level with the rim of the pot. Turn out the ball from the old pot, and pick out the old drainage, and rub off gently the surface-soil down to the roots; then place the ball in the new pot, and fill in the compost around it, pressing it down, as the filling-in goes on, very firmly; finally finishing by covering the old ball. Then give a smart stroke or two on the bench, and the operation of potting is finished. Observe the appearance of the young plant. If it looks as if it had come out of a stove, then place it in a stove again, till the warmth of the season will warrant you placing it in the greenhouse. As it advances in growth, nip off the young tops to make it bushy. About the end of June, place it out-of-doors in a warm, sheltered nook, supplying it liberally with water in dry weather. In the early part of autumn return it into the greenhouse, and keep it there through the winter, giving only a moderate quantity of water. Repot it again in the spring; but still keep it in the greenhouse, and place it in its former situation in the open-air. This will ripen the wood, and, I have no doubt, will cause it to flower. Whoever achieves that first will add another leaf to his laurels.

Propagation.—Young shoots, put into sand, and placed under a hand-light, upon a heated surface, will soon strike root, and should be potted off immediately, for the young roots are apt to perish if kept too long in the cutting-pot.

T. APPLEBY

WOODS AND FORESTS.

THE ELM.

NEXT to the Oak and the Ash, the Elm is the most valuable of our native timber trees. In most of our woodland counties the Elm prevails to a great extent; and it is a most remarkable fact, that the Upright Elms, *Ulmus glabra* and *Ulmus campestris*, produce more timber on a given quantity of ground, providing the soil suits them, than any other, and in less time, too. Hence, in forming new plantations, these two kinds of timber should be freely planted. They are the most suitable of all trees for hedgerow timber, because of their upright habit, and the fact that they will bear pruning to any extent, to keep their branches from spreading and overshadowing grass or arable land. Their roots, it is true, impoverish the land more than the Oak, but less than the Ash. I know no deciduous tree that better shelters land from the cold winds of winter, or the heavy blasts that sometimes blow in summer; and for this reason, if the branches are shortened-in, they produce almost an infinite number of small, twiggy branches, that temper and moderate the mighty blast that would rush by, with almost undiminished force, the naked boles of the Oak or the Ash. As an ornamental tree, remarkable for height and majestic grandeur, there is only the Oak that surpasses the Elm. I saw, only yesterday, in the park, at a place called "Swakeleys," belonging to T. T. Clarke, Esq., many noble specimens of this fine tree; several of them

towered up in majesty to upwards of eighty feet high, with trunks from twelve to sixteen feet in circumference. These are supposed to be nearly two hundred years old, yet they were in perfect health, and evidently adding annually an increase both in thickness and height.

The species of Elm the most valuable as timber and other qualities, is, undoubtedly, the smooth Elm, *Ulmus glabra*, which may be readily distinguished by its smooth, dark-coloured bark, and with its leaves quite smooth also, at least on the upper surface. The next is the narrow-leaved Elm, *Ulmus campestris*, which may be known from its compeer by its rough, corrugated, when old, stem, and its narrow, rough leaves. The next best is the Mountain Elm, *Ulmus montana*, better known by its vulgar name, the *Wyeh* Elm. The top of this species spreads much in what is called the frondose branches; hence, it should always be planted in woods of some extent, and kept closely pruned; its spreading branches render it unfit for hedgerows, or narrow belts, or the open park, though I have seen some fine picturesque trees of it bounding church-yards, in the neighbourhood of Huddersfield, in Yorkshire. When I was a lad, I spent some years in working in Messrs. Pontey's Nursery, near that town, and I well remember climbing the trees of *Wyeh* Elms that bounded the burial-ground of Kirkheaton church, to gather the hop-like seeds of this tree, in the pleasant month of June. When this tree becomes old, it loses, in a great measure, the one-sided branching form, and then it becomes, as I said before, a picturesque object. These three species are the most profitable for him who plants with a view of gain only.

The Elm timber is used for various purposes; perhaps there is no wood known that will keep sound so long, where it is constantly wet. For this quality it is used for pumps and water-pipes, being far more healthy than leaden ones. I, for one, always fear to drink water that has stood any time in a leaden pump, or ran through a long distance of leaden pipe. The wooden ones, I am certain, are sweeter and more wholesome. It is also used largely in the formation of water-wheels. Before the application of steam-power to propelling machinery, Elm-timber was in great demand, wherever there was a fall of water, to make the mighty wheel that made all the work turn round; and even now, where coal is dear and scarce, and water flows plentifully, water-wheels may be seen in use. In the Vale of Wycombe, about sixteen miles from where I now write, there are a great number of paper-mills, and almost the whole of them have immense water-wheels, which are turned round by a quick flowing stream that runs through the beautiful valley. They (the wheels) work day and night, if required, without any cost of fuel, requiring very slight repairs for many years. It is this antiseptic quality, combined with its cheapness, I suppose, that recommends the Elm for the last abode of the poor—the coffin. I believe I may say, for this purpose, almost every poor cottager prefers the Elm—the narrow receptacle that, sooner or later, we must all inhabit. The coffins for the workhouse paupers are now made of the still cheaper wood, common deal. Little, indeed, does it matter whether we are buried in Mahogany, Oak, Elm, or Deal, only let us die in the faith of a Christian, that we may rise again in the sure and certain hope of a blessed resurrection. Little will it then signify what sort of a coffin have we been laid in the earth in.

Elm enters largely also into the manufacture of articles of furniture. It has the two opposite qualities of wearing well, either in water, the earth, or in perfect dryness. Sometimes, wheelbarrows and carts are made of it; but there should always be a building to put them in, when not in use, for this wood rots as soon as any other, if exposed to wet and dry weather alternately. It should be always wet, or, as much as possible, always

dry; hence, if the boards, when sawn up, are not used immediately, they should be protected from rain.

Lastly, the small branches make excellent fuel, and a sweet fire; hence, they are in great request by bakers, to heat their large ovens, previous to putting in a batch of bread, and also by every body requiring a fire lighted. When perfectly dry, and half-decayed, I know no wood that burns quicker.

T. APPLEBY.

(To be continued.)

RETARDED POTATOES.

NEW Potatoes can hardly be said to be a greater treat to the poor man than to the wealthy; for we find all parties agree in welcoming this favourite, so that we need not wonder at unusual interest being excited in their production.

As is usual, in all cases where the public has expressed its wishes to have an article at the earliest possible date, whether that article be public news, or something to eat, there are always some persons ready to substitute a fictitious article for the real one; and, in the case of Potatoes, they have, perhaps, been more successful than in many things else, for they have often palmed "a retarded Potato" on the public for "a forced one," and with a less reprehensible object than many others have done a similar deed; for, be it remembered, a really good "retarded Potato" is a good article, and ought to be regarded as such; but every retarded one is not good, so that we must not confound them. At the same time, let me observe, that "a new Potato" is, generally, agreeable to all; and by "a new one," I mean one not full grown, but still growing, its progress not having been arrested by any natural or artificial means; for, be it remembered, that with the first crop of Potatoes, either or both of these causes may have been at work. Now, then, as we all know the value of an uninterrupted progress in everything, as being the most likely to tend to the general welfare of all vegetation, in the way of securing a healthy and vigorous growth, it follows, that a Potato started into growth ought not to have that progress arrested by such means as a sudden nip of frost, or diminished heat, or sunshine; so, that whenever these evils befall the batch of early Potatoes in the course of their growth, it follows that their quality suffers likewise. They will sometimes recover wonderfully, but it is questionable whether ever they are as good as they would have been, had their onward progress not been stopped by such untoward circumstances; and, as all "retarded Potatoes" must be more or less subjected to such checks, it is unreasonable to expect them equal to those grown under other circumstances more resembling what nature had intended for them.

Now, in prefacing this subject, I ought, perhaps, to have explained what is meant by "a retarded Potato," which, probably, many of our readers may never have heard of. "A retarded Potato" is one of which the growth has been purposely kept back until so late in the autumn as to prevent its maturing itself that season; consequently, after it has made that hurried growth which it does in the warm months of autumn, it sets about ripening ere it has attained its full intended size; but the process of ripening, or maturing, is not so easily accomplished in the dull, cold days of November, as in July or August; so that instead of the root perfecting itself in that way, its progress would seem to be arrested while it was still in a growing state, and, as it is impossible for it to remain stationary, without deterioration, it follows that Potatoes so treated can hardly ever be so good as those grown under other circumstances. Nevertheless, a prudent selection of the kind best adapted to the soil, and the soil itself being of the proper kind, a

useful, good article is sometimes produced, equal, perhaps, to the major part of "forced Potatoes" which have performed quarantine in a green-grocer's shop.

It would be impossible to trace back the system of keeping seed Potatoes until so late in the season as to preclude their arriving at a proper growth that autumn; most probably, the plan had its origin in some accidental case, wherein the planting was delayed beyond its proper time, and the issue found not entirely without interest; for, be it remembered, it is the very late planting alone which causes the produce to assume that half-grown condition which passes for young Potatoes many months after their growth had ceased; the process is easy enough, for, take a quantity of seed Potatoes (I will not say that late kinds are better than early ones, for I have seen both tried with the same success), lay such seed by in some dry, airy place; but as cold as possible, and take care and move them often, in order that they may not be induced to expend themselves in undue attempts to grow, which they cannot, certainly, be prevented from doing entirely, but which a judicious treatment will, in a measure, prevent extending too far. Some growers lay them in the sun, but I have generally kept them in some cool place, not too damp, for the latter cause induces growth as well as warmth; however, as their keeping is an affair which requires no great amount of care, it is sufficient to say, the plumper and sounder they are at planting time, the better prospect they have to become the parents of a good crop; for a root-crop, unlike one of small seeds, is nourished a long time from the parent tuber; hence the propriety of husbanding the resources of that tuber by not allowing it to expend itself in useless growth during the summer, or, on the other hand, do not let its vitals be evaporated by too much drying in the dry atmosphere of summer sunshine; but supposing the happy medium to have been preserved, and that good tubers have been preserved up to the middle of August, it is then proper to see about a place wherein to plant them.

Many years ago, there was a spirited discussion, in a gardening periodical, regarding the merits of different kinds of Potatoes, that were to be treated on the retarding principle, and an eminent grower, near London, attracted some attention by the good quality of his productions that way, and the matter attained a sort of notoriety, which promised to do away with the expensive process of forcing Potatoes by heating materials; however, it did not appear that any one could grow them so well as the individual who sent out the specified kind that was reported excellence itself, for but little was heard of them afterwards, and forcing on the old principle was continued as before. Nevertheless, it was the means of reviving the old plans, and, to this day, many people try a few Potatoes so planted and treated, which is simple enough; only to do it at the precise time proper to ensure just so much growth, and no more, is not what every one can always accomplish, neither can those who have been successful once depend on being so again, even by adopting exactly the same plans. The reasons are obvious. A growth that is made so much later than its proper period is, to a certain extent, an unnatural growth, and its well or ill-being depends so much on the capriciousness of the season, that none but those very few who have that correct notion of the forthcoming weather can succeed, with any degree of certainty, for the crop, or rather the quantity of it, depends so much upon that, as to make it difficult for any one to depend on their doing well.

Observe, what I mean by the weather in autumn, implies only to the planting of the Potatoe; for in a wet, cold, or early winter one, vegetation ceases much sooner than in one of a contrary description; hence the propriety of planting earlier if its character was known; for if they are planted too late, they do

not attain the size necessary for use; and if too early, and a fine season follows, they attain a degree of ripeness and perfection which makes them little different from the ordinary main crop; but as the young amateur may wish to have some guide how to act, I may say, that if he plants a late variety of Potato on a piece of fine, dry, warm ground, in the south of England, by the middle of August, he will stand a fair prospect of having Potatoes at Christmas, which some might mistake for new ones, they being, of course, allowed to remain in the ground all the time, only covered up in December, if very severe weather sets in; but if he prefers an early kind, he may delay planting for a week or ten days longer. A better way, however, is to plant them at different times, and so ensure one or the other being right. The plan is certainly worth a trial; and to those not acquainted with the process of retarding Potatoes, a dish of half-ripened ones at the Christmas holidays will, with careful management on the part of the kitchen authorities, pass very well for new ones, which cannot well be obtained so soon; and as any kind of Potato will do for a trial, and it is probable that some unexpected one may turn out better than the crack-up kinds, it is well worth the amateur's while to give the plan a trial at the proper time.

Young Potatoes obtained by forcing deserve attention, equally if not more so than the other, because the process ensures a better article; but I will enter on this next week.

R. ROBSON.

SELECTING FRUIT-TREES.

"WELL! but they are a very nice lot of trees," was a remark made by a provincial dealer in fruit and forest-trees, to a purchaser; but, the purchaser being as well acquainted with trees as most men, knew no reason why he should accept the dealer's "*ipse dixit*" as being all that was necessary to prove his assertion; and so he looked at them closely, and disapproved of them; stating, at the same time, his reasons for so doing. The subjects in question were "Pear-trees on quince stocks": they had been budded low, and had evidently made a very fine growth the first season, as maiden trees. This was proved by the appearance and evidence of the second year's growth, which had been neglected; and from their having been shortened back too closely the first season, some of the branches had taken an undergrowth much below the horizontal of the position from which the shoots proceeded from the stock, and these crooked branches had been pruned in such a manner, that the trees had become little, low, ugly, willow-stump-like looking trees, with a few stronger branches in the centre; and these were what the dealer ventured to call "a very nice lot of trees."

It is a very injudicious plan to prune "Pear-trees on quince stocks" in this manner, as they are not like Peach-trees, which produce their fruits on the young wood: they should be pruned longer, so as to leave room for the formation of fruit-spurs beneath the growing shoots, which need not be allowed to produce fruit in so early a stage of the tree's growth; but it would have the advantage of opening the centre of the tree, and allow room for their development at a later period. I always like to see a Pear-tree stand clear off the ground, with the branches growing in opposite directions, whilst the tree is young, as there is then a probable certainty of making a good tree of it later.

Now, let us take a view of this venerable dealer's opinion, which was, doubtless, founded as well as the majority of opinions, any person, in the habit of meeting and conversing with a great number of persons, belonging to all classes of society, has opportunities of hearing expressed in the course of a season. It is not at all unlikely that the motive which actuated our "venerable friend," was an ignorant one—*i.e.*, taking for granted that he gave expression to a sentiment, conveyed from his mind to his tongue with the rapidity that sight conveys thought to the mind and it can be given expression to—or, as with, unfortunately, a great

many men, it was one of self-interest; that predominant curse which causes all the strife and discussion so rife amongst men, and "women, too." Ah! I was going to forget that, and waste half the value of the sentiment by omitting two words. But, we will suppose it to be the first, being willing to give mankind generally credit for being too honest to be willing to deceive his fellow-men for the sake of "filthy lucre," or his individual interest; and taking this view of the matter, will proceed.

This vendor of trees, then, was ignorant of the business he was endeavouring to get a living by, in this particular; and as he was ignorant of it, and, consequently, did not know whether he was doing right or wrong in the style of pruning he adopted, as applicable to the different descriptions of trees; nor, after having adopted it, whether the result of it was likely to prove to the benefit of the subjects, or not; nor, after the result was realised, whether it was a beneficial or detrimental one: I say, that, as he was so thoroughly unacquainted with the profession he was carrying on, he ought not to have been encouraged in it, but ought, instead of being allowed to deceive the gardening part of the community, horticulturists, and the lovers of real science, to have been obliged to relinquish the business for want of custom. This is the punishment I would subject all "bungling pretenders and pragmatistical agents" to, who oppose the true course of science, and who pertinaciously protrude themselves on the public liberality, without any merit to recommend them to its notice.

But these remarks merely apply to this particular class of individuals. There are hundreds of persons in the kingdom pretending to be gardeners, who know literally nothing about gardening as a science. In many localities, provided a man pretends to know something about "gurdnen," distorts, similarly, the pronunciation of a few botanical names, or not knowing any of these, learns, through practice, to cut a hedging, to plant a few yards of box, to butcher about the shrubs, and to hoe, rake or sweep the front of a dwelling, screwing up his mouth in the most supercilious manner whilst giving "spression to his piunion," and with all these qualifications, works for fourpence or sixpence per day less than a man really practical and proficient in his business, he is the man for many people, who set him down as being "first-rate." They seem not to care whether he does right or wrong; they are not aware themselves what the result of his operations is likely to produce; they cannot, any more than the man himself, see into futurity; nor have they sufficient knowledge and judgment to be able to take a retrospective view, and thereby to calculate on the probabilities of the future; so that the present is alone considered. The man has tied up the garden as well, in their estimation, as a professional would have done it; and they are satisfied, "*pro tem.*" By-and-by, the result declares itself; some better informed friend steps in, and "blows the roost," and the annoyance ensues. And so it is with the "vendor of trees." He can sell his trees as well as a respectable Nurseryman can sell a better description of trees, provided he meets with the same class of customers as the "Tea Kettle Gardener" meets with; and this last worthy would be likely to assist him in effecting the sale of them, as the sympathy elicited from, and existing between, such individuals, is often resolved, and amendments passed, as well as addendas made to it, in the style of, "You stick to me, and I will stick to you," over a pot of half-and-half, or a glass of gin and water, as often as these worthies meet.

But the respectable and scientific Nurserymen, and their employees, take a very different view of the matter. They show the trees which may be inquired for without saying anything in reference to them but what is suggested by their genuine and real value. They, in fact, allow their articles to speak for themselves. Should they be forest-trees or shrubs, there are but very few difficulties to overcome in deciding whether they are suitable to the purpose they are requisite for; size and form being the only requisites. The straightness of the stem, and the correctness of the formation of a well-balanced head, is as desirable in a forest-tree, which is to stand by itself in any particular locality, and is as necessary for beauty, as in any other plant; but Nature, in her bounty, has so arranged the distribution of favours, that these descriptions of trees would acquire that, *volens volens*, provided they are not too much crowded together in

the Nursery quarters; and as the amount of roots which a tree may have, can often be judged of by the appearance of the head, these desiderata existing, few persons can err in the selection of them. Shrubs, with good, round, well-clothed heads, and plenty of fibrous root—i.e., shrubs which have been frequently transplanted in the Nursery, are those which I should select—size and shape to be taken into consideration, according to locality. With reference to fruit-trees, there is a great variety of opinions existing; many of them contrasting strangely with one another, and still many of them correct, according to locality and circumstances. One person boldly advocates the planting of maiden-trees; the quickness—if I may so express it—of his soil is such that he is enabled to form a tree in a very short space of time. Another, whose soil is of a sluggish character, and in which the trees do not grow very rapidly, requires a tree formed before he plants it, or he would be so long getting a tree, that his "patience" would be exhausted in the interval. Mr. Errington and Mr. Beaton write very instructively on these subjects; and I would refer the readers of this to the many articles which have appeared during the last few months, from their pens, for a fund of information on these and all other subjects bearing on the "pruning and cultivation of fruit-trees."

"These are of the sort you require," is likely to be the first proposition proceeding from a member of the last fraternity of "Tree Sellers;" and it seldom happens that the rejoinder made by the purchaser is of a character to necessitate a reply similar to that which has given rise to the writing of this article. If the trees are suitable, they are selected; and being carefully taken up, are transmitted to the purchaser's residence or garden; and if they are not, they are rejected, and left for the next comer. Business is conducted in a candid, gentle, and proper manner.

Every person who goes to a Nursery, or garden, for the purpose of selecting trees, either for planting a new, or renewing the plantation in an old, garden, should be well acquainted with the nature of the trees he requires, or be able to deal in full confidence with the Nurseryman of whom he intends to purchase. One of these essentials is absolutely necessary, to feel satisfied of a good result ensuing. Confidence should be the foundation on which the "unknown" should build on this subject. Scientific knowledge, and real value, should be the "guiding stars and criteria" by the which trees should be selected, and conclusions come to, as to their merits; and the "slippery sixpence" should never be withheld, nor valuable time be frittered away, in "driving a bargain" for any particular individual tree or plant; as "good trees" are likely to produce "pounds" ere their course is run; whereas, bad ones have to be made "good" after they get into the gardener's hands, before they are likely to produce pence.—C. B. S., Jersey.

DERBY ANNUAL EXHIBITION OF POULTRY.

THE present year's exhibition of Poultry, held in the County Court, Derby, on Thursday, the 30th ultimo, and following day, proved the most successful of any that has taken place throughout the kingdom during the present season; for, by the very excellent arrangements of the managing committee, not only were the surrounding aristocracy induced to become its patrons, but also to attend the "private views," in most unusual numbers. To the inhabitants of Derby it proved quite a gala day; and as the time for general admission approached, numbers were observed waiting the opportunity of securing the prize-pens, by "claiming" them at the prices at which they were entered by their respective proprietors; consequently, very considerable numbers of the best poultry changed ownership, and some few were again repurchased at even an advanced amount. The result was, as a whole, most satisfactory to all parties, whether we consult the interests of the committee itself, the public, or the exhibitors; indeed, almost all the principal pens gaining the society's premiums obtained willing purchasers. The exhibition itself was exceedingly well-conducted; every appointment seemed efficiently sustained, and the only real complaint was the absence of sufficient light to some few of the pens; this was, however, obviated, as far as possible, by a liberal supply of gas; still

the judgment as to relative excellence can never be so uniformly successful where specimens are received under so different advantages of position. It is well, as far as possible, to avoid any differences in this respect as to competing pens; and we only make the suggestion, as, doubtless, other poultry shows are now very speedily to take place, where, perhaps, the acting committees may have not duly reflected on its great importance.

The *Cochins* were very good indeed, and the specimens exhibited were not only of great characteristic merit, but most of them of very superior colour. Their superiority over those that have been of late competing at our various poultry shows was strikingly apparent. As to the darker varieties of Partridge-coloured birds, they have very rarely been excelled: these remarks appertain to both the adult and also the chicken prize-pens. The white were also good specimens, and seemed the general public favourites. The *Spanish* classes were also excellent; but it was in the *Grey Dorking* classes that the superiority of the exhibition was most manifest, and never were so many first-rate birds brought into close competition; indeed, a reference to the prize-list will prove how highly they must have stood in the estimation of the gentlemen who officiated as the judges. In the *White Dorkings* there was also the same visible improvement. The whole of the *Game* classes were not only well filled, but the competition was also severe throughout the generality of them. Among the *Hamburgh* classes were many pens containing "hen-tailed" cocks, none of which, however, obtained premiums. Some of the *Silver Polands* were birds of very high merit. In the *Sebright Bantams* there was not anything deserving of especial notice. The *Turkeys* were very commendable; and the first-prize *Geese* have certainly never been excelled for size, if they have even ever been equalled; these, too, were speedily claimed. The *White Aylesbury Ducks* were good; and we noticed several pens of the *Buenos Ayres Ducks*, of far beyond general character.

All necessary arrangements for the speedy return of the poultry were duly considered, and we are informed, that in a few hours from the final closing of the doors, each pen was journeying to its destination.

The judges were, Mr. Bailey, London, and Mr. Hewitt, Birmingham.

Class 1.—SHANGAE, OR COCHIN-CHINA (Buff and Cinnamon).—5. First prize, Mr. W. Wanklyn, jun., Bury, Lancashire. 6. Second prize, Mr. Thomas Challis, Brethby, Burton-on-Trent. Commended.—No. 1.

Class 2.—Chicken of 1854.—29. First prize, Mr. Thomas Challis, Brethby, Burton-on-Trent. 32. Second prize, Mr. John Harrison, jun., Snelston Hall, Ashbourn. Highly Commended.—Nos. 17, 23, 28, 38. Commended.—Nos. 24, 34, 36. (A good class.)

Class 3.—Brown and Partridge.—44. First prize, Mr. Richard Swift, Southwell. (Second prize withheld.)

Class 4.—Chicken of 1854.—48. First prize, Mr. Richard Swift, Southwell. (Second prize withheld.)

Class 5.—White.—49. Second prize, Mr. Robert Chase, Birmingham. (First prize withheld.)

Class 6.—Chicken of 1854.—53. First prize, Mr. Robert Chase, Birmingham. 52. Second prize, Miss Fauny S. Rodbard, Langford. Highly Commended.—No. 54.

Class 7.—Black.—58. First prize, Mr. C. T. Nelson, The Lozells, Birmingham. (Second prize withheld.)

Class 8.—Chicken of 1854.—63. First prize, Rev. George Calvert, Beeby, Leicester. (Second prize withheld.)

Class 9.—SPANISH.—Chicken of 1854.—68. First prize, Mr. John Harrison, jun., Snelston Hall, Ashbourn. 69. Second prize, Mr. E. W. Wilmot, Hulme Walfield, Birmingham.

Class 10.—Chicken of 1854.—82. First prize, Mr. John Harrison, jun., Snelston Hall, Ashbourn. 83. Second prize, Mr. John Ireland Blackburne, Light Oaks, Cheadle. Highly Commended.—No. 76. Commended.—Nos. 77 and 80.

Class 11.—DORKINGS (Coloured).—87. First prize, Dr. Hitchman, Mickcover. 95. Second prize, Rev. F. Thursby, Abington, Northampton. Highly Commended.—Nos. 86, 93, 94, 98, 103. Commended.—No. 97. (A highly meritorious class.)

Class 12.—Chicken of 1854.—132. First prize, Mr. John Faulkner, Brethby. 131. Second prize, The Countess of Chesterfield, Brethby. Highly Commended.—Nos. 105, 118, 119, 126, 130. Commended.—Nos. 123, 125, 133. (The class generally commended.)

Class 13.—White.—144. First prize, Rev. Charles Newdigate, West Hallam. 146. Second prize, Mrs. Stuart Smith, Moira, Ashby-de-la-Zouch.

Class 14.—Chicken of 1854.—147. First prize, Mr. Francis Leedham, Burton-on-Trent. 152. Second prize, Mr. George Fell, Springfield, Warrington. Highly Commended.—No. 149. Commended.—No. 153.

Class 15.—GAME (Black-breasted and other Reds).—160. First prize, Mr. James Edge, Strelley Hall, Nottingham. 158. Second prize, Mr. Wm. Cox, Brailsford, Derby. Highly Commended.—No. 159. Commended.—Nos. 154, 156, 161.

Class 16.—Chicken of 1854.—177. First prize, Mr. Thomas Staley, Newhall, Burton-on-Trent. 173. Second prize, Mr. Wm. Cox, Brailsford, Derby. Highly Commended.—169, 174. (A good class.)

Class 17.—White and Piles.—186. First prize, Mr. G. T. Eaton, Cavendish Bridge. 187. Second prize, Mr. George H. Chawner, Sudbury.

Class 18.—Chicken of 1854.—193. First prize, Mr. George H. Chawner, Sudbury. 194. Second prize, Mr. R. Choyce, Brameote Hall, Tamworth.

Class 19.—Black and Brassy winged except Greys.—197. First prize, Mr. Henry Beldon, Bradford. (Second prize withheld.)

Class 20.—Chicken of 1854.—198. First prize, Mr. Joseph Henderson, Alfreton. (Second prize withheld.)

Class 21.—Blues and Greys.—200. First prize, Mr. John Rodbard, Aldwick Court, Langford, Bristol. 203. Second prize, Mr. R. Choyce, Brameote Hall, Tamworth.

Class 22.—Chicken of 1854.—207. First prize, Mr. John R. Rodbard, Langford, Bristol. 209. Second prize, Mr. John Wright, Hulland Hall, Ashbourn. Highly Commended.—No. 211.

Class 23.—HAMBURGH (Gold-spangled).—213. First prize, Mrs. C. H. Horsfall, Duffield Bank House, Derby. 216. Second prize, Mr. George Fell, Springfield, Warrington.

Class 24.—Chicken of 1854.—223. First prize, Mrs. C. H. Horsfall, Duffield Bank House, Derby. 217. Second prize, Mr. W. Cannan, Bradford, Yorkshire.

Class 25.—Silver-spangled.—226. First prize, Mr. John Faulkner, Bretby. 228. Second prize, Mrs. Cooper, Cheadle.

Class 26.—Chicken of 1854.—234. First prize, Mr. Henry Sharp, Bradford. 239. Second prize, Mr. T. C. Russell, Coalbrook Dale, Salop.

Class 27.—Gold-pencilled.—243. First prize, Mr. Henry Sharp, Bradford. 245. Second prize, Mr. Michael Smedley, Stapleford.

Class 28.—Chicken of 1854.—249. First prize, Mrs. Henry Brough, Kirk Langley. 247. Second prize, Mr. Michael Smedley, Stapleford. Highly Commended.—No. 250.

Class 29.—Silver-pencilled.—Prizes not awarded.

Class 30.—Chicken of 1854.—255. First prize, Mr. Alfred Smith, Norton, Derby. 258. Second prize, Mr. Samuel Musgrove, Kirk Langley. Highly Commended.—No. 259. Commended.—Nos. 252, 254.

Class 31.—POLAND (Black, White-crested).—264. First prize, Mrs. C. H. Horsfall, Duffield Bank House, Derby. 265. Second prize, Miss Darwin, Breadsall Priory.

Class 32.—Chicken of 1854.—269. First prize, Mr. John Wright, Hulland Hall, Ashbourn. (Second prize withheld.)

Class 33.—Golden, with or without Ruffs or Beards.—272. First prize, Mr. Henry Beldon, Bradford. 271. Second prize, Mr. Thomas Shaw, Derby.

Class 34.—Chicken of 1854.—281. First prize, Mr. John Wright, Hulland Hall, Ashbourn. 281. Second prize, Mr. Henry Sharp, Bradford. Commended.—Nos. 280, 282.

Class 35.—Silver, with or without Ruffs or Beards.—285. First prize, Mr. Parkins Jones, Fulham. 286. Second prize, Miss Cannan, Bradford.

Class 36.—Chicken of 1854.—289. First prize, Miss Cox, Brailsford. 292. Second prize, Mr. Parkins Jones, Fulham.

Class 37.—BANTAMS (Gold-laced, clean legged).—295. First prize, Mr. J. B. Wanklyn, jun., Bury. (Second prize withheld.)

Class 38.—Silver-laced, clean legged.—299. First prize, Mrs. Lockyer, Heather, Ashby-de-la-Zouch. (Second prize withheld.)

Class 39.—Any other variety.—309a. First prize, Mr. George Curzon, Weston Lodge. 304. Second prize, Mr. Matthew Ridgway, Dewsbury, Yorkshire.

Class 40.—ANY OTHER DISTINCT VARIETY.—312. First prize, Mr. T. S. Tunaley, Millfield, Tamworth. 313. Second prize, Mr. James Oldham, Long Eaton. Highly Commended.—Nos. 314, 315.

Class 41.—Chicken of 1854.—321. First prize, Rev. R. Burgess, Radcliffe-on-Trent. 323. Second prize, Rev. George Calvert, Beech, Leicester.

Class 42.—TURKEYS.—Cock and two Hens.—331. First prize, Mr. E. W. Wilmot, Hulme Walfield, Congleton. 329. Second prize, Miss Cox, Brailsford. Highly Commended.—No. 330.

Class 43.—Birds of 1854.—336. First prize, Mr. J. S. Spencer, Colingwood, Burton-on-Trent. 334. Second prize, Mr. W. H. Mold, Alderwasley. Highly Commended.—No. 333.

Class 44.—GESE.—Gander and two Geese.—343. First prize, Rev. Thos. O'Grady, Hognaston. 339. Second prize, Mrs. Thos. Townley Parker, Astley Hall, Chorley. Highly Commended.—Nos. 337, 341. (The whole class meritorious.)

Class 45.—DUCKS (Aylesbury).—346. First prize, Mr. John R. Rodbard, Langford. 347. Second prize, Lady Evelyn Stanhope, Bretby. Highly Commended.—No. 350.

Class 46.—Rouen.—354. First prize, Mr. T. W. Pearse, Bradford. 352. Second prize, Mr. Henry Allison, jun., Chorley, Lancashire.

Class 47.—Any other variety.—364. First prize, Mr. John Harrison, Snelston Hall, Ashbourn. 360. Second prize, Miss Steel Perkins, Sutton Coldfield. Highly Commended.—Nos. 356, 362.

READING AGRICULTURAL AND POULTRY EXHIBITION.

THIS show took place, on Wednesday and Thursday, the 29th and 30th of November, and was well supported. The Agricultural department was held in the Cattle Market, which had been made into one most spacious tent for the occasion. The Poultry, on the other hand, filled a very large tent, that was luckily quite independent of the general division of the show. The weather was not unusually wet, but the wind proved most boisterous and appalling, and acting with immense force upon the very expansive sheeting raised over the cattle, to protect them from sudden changes of the weather, stripped a large portion entirely, and so much shattered the remainder, that early on the morning of the second day of exhibition the cattle were speedily withdrawn, and the whole superstructure removed, lest serious injury should befall either the animals or attendants. This proved, very naturally, a most serious cause of loss to the committee, and shews how highly essential it is, that contractors, on such occasions, should be more than usually careful to fully provide against any such contingency. The effect on the receipts was very considerable, and though no blame whatever is attributable to the managers themselves, the difficulties in which, for a time, they were (from this cause alone) placed, can scarcely be appreciated, except by an eye-witness.

The poultry tent, however, stood every gust. The parties attendant on this department were unceasing in their efforts to prevent any casualty, however trifling; and from their well-timed precautions all remained perfectly secure.

The *Spanish* were very superior; those of Mr. Botham being eminently successful, and well they deserved their honours; the chicken of this variety, were also of superior character. The *Grey Dorkings* were both numerous and of first-rate quality; this variety appears to be fast rising in the opinions of agriculturists, and we noticed many pens were speedily "claimed," though entered at very high prices. The first-prize chicken were most extraordinary birds, of incredible size, and perfect as to matching, in both ground, colour, and markings. The *White Dorkings* were also very good. The *Cochins* were, as a whole, not very superior, if the winning birds are excepted; and the green legs so frequent in the white ones told here sadly to their disadvantage. The *Brahmas* mustered strongly, and among them were many very excellent groups. In the *Malays* were a pen of most strikingly beautiful grey ones, exhibited by Messrs. Baker, of London; they were speedily disposed of. The *Game* were a highly meritorious class. The *Pencilled Hamburgs* were also very good, and the first-prize pen of (golden) chicken were the most perfect birds that have recently appeared in public.

In the *Poland* classes were some fowls which would add credit to any exhibition. The *Bantams* were, many of them, very superior; but unfortunately several pens arrived "too late" for competition. The *Geese* were perfectly gigantic birds, and the improvement is really surprising that has taken place in the breeds now exhibited over these of the preceding years.

In the extra class were shown a very good pen of *Black Cochins*, which obtained a "high commendation." The officials were most untiring in their desire to promote the welfare of the poultry, as also the general convenience of the visitors, and their efforts were thus the subject of much public commendation; indeed, under the peculiar circumstances, no parties could have fulfilled their onerous duties more effectually, or are more truly deserving of praise, excepting, however, the prompt return of the birds. They must be more attentive to this another year. We trust that the event, as to pecuniary return, will be better than was anticipated, as the weather luckily remained tolerably fair, though unusually windy, to its conclusion.

The judges were J. Bailey, Esq., London, and E. Hewitt, Esq., Birmingham.

Class 1.—SPANISH.—Exceeding one year.—2. 3. First and second prizes, Mr. George Botham, Wexham Court, Slough. Highly Commended.—7. Mr. A. Williams, Reading.

Class 2.—SPANISH.—Chicken of 1854.—15. First prize, William Saunders, Esq., Egypt Cottage, Cowes, Isle of Wight. 3. Second prize, Mr. Daniel Parsley, Roek Cottage, Bristol. Very Highly Commended.—11. John G. Ramsden, Esq., Twickenham. 20. Charles Edwards,

Esq., Brislington, near Bristol. 22. Lady Macdonald, Woolmer Lodge. Highly Commended.—7. Mr. William Cave, Hartley Row. (Meritorious class.)

Class 3.—DORKING (Coloured).—Exceeding one year.—10. First prize, Mr. Breavington, Vicarage Farm, Hounslow. 3. Second prize, Mr. George Botham, Wexham Court. Commended.—7. Mr. Thos. Whittington, jun., Wootton Warren, near Henley-in-Arden.

Class 4.—DORKING (Coloured).—Chicken of 1854.—1. First prize, Robert Loder, Esq., The High Beeches, Crawley, Sussex. 35. Second prize, Rev. E. H. Kettloe, Chadwell Rectory, Grays, Essex. Highly Commended.—6. A. H. L. Popham, Esq., Purley Park. 15. Mr. W. Belcher, Abingdon. 19. Mr. S. C. Baker, 3. Half-moon Passage, London. 21. Mr. Joseph Smith, Henley-in-Arden. 24. Mr. Joseph Whittington, jun., Wootton Warren. 25. Mr. W. Smith, Henley-in-Arden. 26. Mr. W. Smith, Henley-in-Arden. 34. J. G. Ramsden, Esq., Twickenham, Middlesex. Commended.—27. Mr. Thos. Whittington, jun., Wootton Warren. 44. Miss A. Wilcox, Nailsea Court. (A highly meritorious class.)

Class 5.—DORKING (White).—Exceeding one year old.—1. First prize, Mrs. Mills, Bisterne, Ringwood. 7. Second prize, Mr. A. Williams, Reading.

Class 6.—DORKING (White).—Chicken of 1854.—10. First prize, Mr. William Bullford, Brightwell, Oxon. 3. Second prize, Mr. Joseph Cliff, Dorking. Commended.—1. Francis J. Coleridge, Esq., The Manor House, Ottery St. Mary, Devon. 7. Mr. H. Bone, Aven, Ringwood. (A good class.)

Class 7.—COCHIN-CHINA (Cinnamon and Buff).—Exceeding one year old.—9. First prize, G. W. Hoyle, Esq., Sydney Villas, Reading. 11. Second prize, G. W. Hoyle, Esq., Sydney Villas, Reading. Commended.—10. G. W. Hoyle, Esq., Sydney Villas, Reading.

Class 8.—COCHIN-CHINA (Cinnamon and Buff).—Chicken of 1854.—21. First prize, G. W. Hoyle, Esq., Reading. 31. Second prize, Rev. J. Mathew, Chelvey, near Bristol. Highly Commended.—22. G. W. Hoyle, Esq. 32. Captain W. H. Snell, St. Swithin's Lane, London. Commended.—29. Miss Coney, Braywick, Berks.

Class 9.—COCHIN-CHINA (Brown or Partridge-feathered).—Exceeding one year old.—Prizes withheld.

Class 10.—COCHIN-CHINA (Brown or Partridge-feathered).—Chicken of 1854.—5. First prize, Captain W. H. Snell, St. Swithin's Lane. 3. Second prize, J. T. Foster, Esq., Hartley Row.

Class 11.—COCHIN-CHINA (White).—Exceeding one year old.—2. Second prize, Mrs. Mills, Bisterne, Ringwood. (First prize withheld.)

Class 12.—COCHIN-CHINA (White).—Chicken of 1854.—6. First prize, Mr. D. Smith, Chipping Norton, Oxon. 2. Second prize, Mr. G. Botham, Slough. Commended.—4. Mrs. Mills, Bisterne, Ringwood. 8. Mr. Thomas Shaeckel, Hayes.

Class 13.—BRAMAH POOTRA.—Chicken of 1854.—10. First prize, Robert H. Bush, Esq., Ashton Lodge, near Bath. 11. Second prize, Mr. William Cave, Hartley Row. Very Highly Commended.—3. Mr. G. Botham. 8. Mr. Breavington, Hounslow. Commended.—17. Sir Charles Ibbetson, Bart., Farley Castle, Berks. (A good class.)

Class 14.—MALAY.—Of any age.—2. First prize, Mr. S. C. Baker, 3. Half Moon Passage, London. 6. Second prize, Mr. Jas. Leighton, 183, High-street, Cheltenham. Commended.—5. Mr. Austen Williams, Reading.

Class 15.—GAME FOWL (White, Piles, Duckwings, and Greys).—Exceeding one year old.—3. First prize, Mr. E. Farmer, Greet Spark Brook, Birmingham. 2. Second prize, Mr. George Botham, Slough. Highly Commended.—1. Mr. Henry Shield, Taunton.

Class 16.—GAME FOWL (White, Piles, Duckwings, and Greys).—Chicken of 1854.—3. First prize, Mr. George Ellis, Bury St. Edmund's. 2. Second prize, Mr. George Slyfield, Wokingham.

Class 17.—GAME FOWL (Black, Black-breasted, and other Reds).—Exceeding one year old.—4. First prize, Mr. Henry Shield, Taunton. 6. Second prize, Edward Farmer, Esq., near Birmingham. Commended.—1. Mr. George Slyfield, Wokingham.

Class 18.—GAME FOWL (Black, Black-breasted, and other Reds).—Chicken of 1854.—3. First prize, Mr. G. Ellis, Bury St. Edmund's. 2. Second prize, Mr. W. Green, Aylesbury. Commended.—4. Mr. H. Shield, Taunton.

Class 19.—GOLDEN-PENCILLER HAMBURGH.—Exceeding one year old.—2. First prize, Mrs. Mills, Bisterne, Ringwood. 4. Second prize, Rev. J. Atkinson Briggs, near Sevenoaks.

Class 20.—GOLDEN-PENCILLER HAMBURGH.—Chicken of 1854.—9. First prize, Mr. Richard Titchener, Chiseldon, Wilts. 12. Second prize, Rev. J. Atkinson Briggs, Sevenoaks, Kent. Very Highly Commended.—Mr. C. Adams, Windsor. Commended.—10. Chas. Edwards, Esq., Brislington, Bristol.

Class 21.—GOLDEN-SPANGLER HAMBURGH.—Exceeding one year old.—3. Second prize, Mr. Jos. Whittington, jun., Wootton Warren. (First prize withheld.)

Class 22.—GOLDEN-SPANGLER HAMBURGH.—Chicken of 1854.—4. First prize, Mr. Henry Thompson, Windsor. 3. Second prize, Mr. Henry Thompson, Windsor.

Class 23.—SILVER-PENCILLER HAMBURGH.—Exceeding one year old.—3. First prize, Edw. Archer, Esq., Malvern. 4. Second prize, Mr. T. Buckland, Wraisbury.

Class 24.—SILVER-PENCILLER HAMBURGH.—Chicken of 1854.—7. First prize, Edward Archer, Malvern. 12. Second prize, F. H. Aberdein, Esq., Honiton. Highly Commended.—2. Mr. G. Botham, Slough. 5. Rev. T. B. Pryor, Bennington Rectory, Stevenage. Commended.—1. Jas. E. Marshall, Esq., Taunton. (A good class.)

Class 25.—SILVER-SPANGLER HAMBURGH.—Exceeding one year old.—2. First prize, Fras. Edwards, Esq., Bulstrode Park, Bucks. 3. Second prize, Mr. Thos. McCann, Malvern.

Class 26.—SILVER-SPANGLER HAMBURGH.—Chicken of 1854.—12. First prize, The Rev. H. K. Venn, Honiton. 20. Second prize, Francis Edwards, Esq., Bulstrode Park. Highly Commended.—13. Mr. J. Atkins, Eton. 16. Mrs. John Wasey, Stratford-on-Avon. Commended.—4. Robt. S. Thompson, Windsor. 14. F. Edwards, Esq., Bulstrode Park.

Class 27.—POLANN FOWL (Black with White Crests).—5. First prize, Thomas P. Edwards, Esq., Lyndhurst, Hants. 4. Second prize, Thomas P. Edwards, Esq., Lyndhurst, Hants.

Class 28.—POLANN FOWL (Black with White Crests).—Chicken of 1854.—3. First prize, T. P. Edwards, Esq., Lyndhurst. 1. Second prize, Jas. F. Hine, Esq., Thickethorn House, Ilminster. Commended.—2. Mrs. Mills, Bisterne.

Class 29.—POLANN FOWL (Golden).—Exceeding one year old.—2. First prize, Robt. Bush, Esq., Ashton Lodge, Bath.

Class 30.—POLANN FOWL (Golden).—Chicken of 1854.—2. First prize, Mrs. Mills, Bisterne, Ringwood. 1. Second prize, Charles E. Coleridge, Esq., Eton College.

Class 31.—POLANN FOWL (Silver).—Exceeding one year old.—1. First prize, Charles E. Coleridge, Esq., Eton College. 2. Second prize, Mr. S. C. Baker, 3. Half Moon Passage, London.

Class 32.—POLANN FOWL (Silver).—Chicken of 1854.—1. First prize? C. E. Coleridge, Esq., Eton College. 2. Second prize, F. Edwards, Esq., Bulstrode Park.

Class 33.—BANTAMS (Gold-laced).—All prizes withheld.

Class 34.—BANTAMS (Silver-laced).—8. First prize, C. Ballance, Esq., Taunton. (Second prize withdrawn.)

Class 35.—BANTAMS (White).—2. First prize, The Hon. A. Irby, Hedsor. 4. Second prize, The Hon. A. Irby, Hedsor.

Class 36.—BANTAMS (Black).—3. Extra first prize, Rev. R. N. Bricknell, Eynsham. 6. First prize, Chas. Ballance, Taunton. 4. Second prize, G. H. Montagu, Esq., Caversham.

Class 37.—GESE.—2. First prize, Thos. Panton Edwards, Esq., Lyndhurst, Hants. 1. Second prize, Mr. H. G. R. Breavington, Vicarage Farm, Heston, Hounslow.

Class 38.—DUCKS (White Aylesbury).—7. First prize, Mr. H. G. R. Breavington, Vicarage Farm, Heston, Hounslow. 19. Second prize, Lady Margaret Macdonald, Woolmer Lodge, Hants. Highly Commended.—11. T. P. Edwards, Esq., Lyndhurst, Hants. 13. Wm. Molyneux, Esq., Nuneham Park, Oxford. Commended.—14. Wm. Molyneux, Esq., Nuneham Court, Oxford. (A good class.)

Class 39.—DUCKS (Rouen).—12. First prize, Charles Ballance, Esq., Mount-street, Taunton. 8. Second prize, Thomas Panton Edwards, Esq., Lyndhurst, Hants.

Class 40.—TURKEYS.—5. First prize, Mr. A. Williams, Reading. 1. Second prize, Joseph Symonds, Esq., Gorwell, Dorchester. Highly Commended.—2. Mr. J. Millward, Newton St. Loe, Somerset. Commended.—4. Lady M. Macdonald, Woolmer Lodge.

Class 41.—TURKEYS.—4. First prize, Mr. A. Williams, Reading. 1. Second prize, Miss S. H. Hickman, Colnbrook. Commended.—2. Mr. J. W. Pooock, Chieveley. 3. Miss J. Milward, Newton St. Loe, Somerset.

EXTRA STOCK.—Highly Commended.—3. E. A. Dauberry, near Cirencester. 5. F. Edwards, Esq., Bulstrode Park. 15. F. L. Holland, Esq., Trunkwell House. 17. W. Stephens, Esq., Prospekt Hill. 20. Mr. F. Staff, London. Commended.—13. Miss Crawshaw, Caversham. 21. Mr. F. Staff, London.

BLACK BARBAROSSA VINE.

A FRIEND of mine being in London, at the Great Industrial Exhibition of 1851, went to the Horticultural Society's October Show, in Regent-street. He was much struck with the appearance of some splendid bunches of Grapes, exhibited by Mr. Butcher, under the above name, and purchased two plants of the sort. One of them was planted, out-of-doors, against a southern wall; but it has not thriven as well as could have been wished; the other was given to me, and I planted it in the border of a greenhouse, with nineteen feet lopers; and now (after being planted two years—i.e., from November, 1852, until November, 1854, having been obliged to keep it in a pot during the first year, on account of its being so small) it has made two extraordinary shoots the whole length of the lopers, which have produced, during the season, the most splendid foliage. One of the shoots is $2\frac{1}{4}$ inches in circumference, and the other is $1\frac{1}{2}$ inches. The wood has ripened well, and the plumpness of the buds augur well for a crop of fruit next season. I am so well pleased with its appearance, that I think the COTTAGE GARDENER may with confidence recommend it to its readers.—C. B. S., Jersey.

A YEAR WITH THE AYLESBURYS.

THINKING that many persons might be induced to keep this elegant, hardy, and profitable water-fowl, if they knew the ease with which they are managed, and the slight accommodation they require, I am induced to trouble you with twelve months' experience respecting them.

During the last year, I possessed the means of keeping only one variety of Duck, having, on the lawn at my late residence at Willesden, a circular wire fence, thirty yards across, enclosing an equal amount of land and water, the former bearing some low evergreen shrubs and a few deciduous trees; the whole being sheltered from the north and east winds by a little coppice. In this enclosure I placed, early in January, two Aylesbury Ducks and one Drake, all first-class birds. As there was no house of any kind in the enclosure, I placed in it (on their sides) some American flour-barrels, containing soft straw, to serve as nests and sleeping-places; and as the limited range prevented the birds obtaining food for themselves, they were *most liberally* fed with oats, placed in a vessel of water; a plan which has the double advantage of being more acceptable to the Ducks, and less inviting to the sparrows. With this feeding the Ducks immediately began to lay, and during the intense cold of January, and also during February and March, the average supply of eggs was six per week for each; but it must not be forgotten that they were most liberally fed at least three times a-day. After a short time, I removed the barrels, as I found they were never used as sleeping-places, and very seldom as nests, the eggs being generally deposited under a shrub, and always laid during the night.

After this, there can be but little doubt as to the hardihood of this variety. Often have I seen them, during the intense cold of a frosty moonlight night, enjoying their oats; and I have also observed, that when the pond was not frozen over it was not unfrequently selected for a roosting-place.

My earliest broods were hatched by Cochin hens, and progressed rapidly, being fed for a fortnight on oatmeal and middlings, and afterwards on oats and water. Those eggs hatched under hens required only twenty-six days for hatching; whereas, those placed by the Ducks took a longer period—thirty or thirty-one days. I did not attempt any very early broods, having no convenience for rearing them under shelter.

The eggs produced by this system of management were large, with white porcelain-like shells, and as free from any objectionable flavour as the finest hen's egg; a circumstance to be attributed to the purity of their diet.

In June, as the flock had become numerous, they were allowed the whole range of about two acres of shrubbery, when, of course, they required rather less hand-feeding; but as they made their way into the kitchen-garden at night, and ate out the hearts of the whitest cabbages, they had to be shut up at dusk. Another objection to giving them a free range at night is, that the eggs are usually lost, being laid in any place the Duck may happen to be at the time. When about to sit, however, they are laid in a sheltered nest, usually under a shrub, and carefully lined with down. In many Poultry books the statement is made, that Ducks are too fond of the water to be good sitters. This is one of those absurd remarks that are copied by one compiler after another. I have often noticed that a Duck, on the opposite side of the pond to the nest, will journey round by land in preference to swimming across, when sitting; which I attribute to an instinctive desire to avoid cooling the body at such times.

It may be, perhaps, alleged, that the plan of liberal feeding, here recommended, is unprofitable; but the large supply of eggs, and the number of Ducklings fit for the table at eight to ten weeks old, will prove that this idea is an incorrect one. It should be borne in mind, that the growth of a duckling is excessively rapid, when compared with that of a chicken; and this can only be accomplished by a proportionate supply of food. And I may mention, that though I began with birds that had taken first prizes, the ducklings, before the end of the year, exceeded their parents in size and weight. The birds began laying in the beginning of October, and up to the end of the month averaged thirteen eggs weekly, from four birds,—one old and three

young ones; but I do not imagine that more than two were laying.

In all the Poultry works that I have looked at, I have seen no other mode of distinguishing the sexes alluded to than the recognition of the curled tail-feathers of the Drake; these are not always present, and are readily removed by accident or design, when a second-rate Drake makes a first-rate Duck, and, as such, not unfrequently takes the first prize at the Poultry Shows. They may be, however, immediately known by the voice; that of the Duck is a distinct, unmistakable *quack!* that of the Drake is, what may be termed, a querulous querk. The distinction is so marked, that if once noticed, the sexes are not liable to be again confounded.

In conclusion, I may state, that I believe it to be as true of Ducks as of all other varieties of Poultry, that to pay, they must be well kept. A certain portion of food is required for the daily support of the body of the animal, and it is only the excess given beyond that quantity that contributes to the production of eggs, or the growth or fattening of the animal. If, therefore, enough food only is supplied to keep the animal alive, no profitable results are obtained; and the complaint then is, "My fowls don't pay." Consequently, their amount of food is diminished, and then they produce less.

It is quite certain, that with a given quantity of corn you may obtain more eggs by properly feeding twenty head of Poultry than by using it to half feed double the number.

W. B. TEGETMEIER.

A PRODUCTIVE PINE-APPLE.

I SEND you an account of the produce of an Enville Pine plant. Last season, 1853, I fruited a maiden plant, twenty months old. The fruit, when cut the last day of May, weighed 6lbs. 1oz. The plant sent up three strong suckers. I turned it out of the pot into a much larger one; all the suckers started into fruit; they were cut late in September, 1854; the heaviest was 6lb. 4oz.; the second 6lb. 2oz.; and the third 5lb. 13oz.; 16oz. to the pound; which makes altogether, from one plant, or stock, in thirty-six months, or little more, 24lb. 4oz. I find from this that the system, as regards time and profit, is the best. I have some fine plants with two, three, and four suckers each.—T. CROSSLING, *Felton Park, Northumberland.*

LYCORIS AUREA; OR, GOLDEN LILY.

I HAVE flowered this pretty Amaryllid, this season, and was very much pleased with its simple and honest appearance. Its Nerine-like nakedness, from the want of foliage at the period of blooming, seemed to render it an object of charity; and so I clothed the surface of the mould in the pot which it was growing in with moss; and, armed by my kindness, it was prepared to make a much more respectable appearance to the gazing regards of the floricultural part of my friends than it was before.

The colour of the flower is a golden-yellow, by no means common amongst flowers. Its stem grew fourteen inches high, was of a pale green colour, and an inch in circumference at the base. Its florets were three in number, the petals undulated, and the tube funnel-shaped about 2½ inches long, and one inch in diameter at the mouth or widest part, with the petals reflexed. I thought it very pretty, because there was a novelty about it which added to its charms. It thrives well in a light loam, and will do well in a greenhouse or pit, producing its flowers in September or October, and its leaves during the winter, requiring protection during its growth from frost.

I was induced to gain more information respecting it; and, seeking, the next subject which attracted my attention was the derivation of its name. I find "Lycoris" was the name of a Roman female, celebrated for her extravagance and beauty; and why it should have been applied to this little, simple, honest-looking flower, I do not know; as it is not extravagant enough to produce its leaves and flowers at the same time. I fancy it to be a misapplication; or

some enthusiastic admirer of its golden hue must have applied it to it.

The skin of the bulb is of a dark brown hue, and as thin and glossy as tissue paper. The shape of the bulb is more round than that of the generality of the species. It is pretty as a whole, and worthy of a place in every collection of bulbs.—C. B. S., *Jersey*.

WASTE IN CORN.

In a former paragraph, we drew attention to the sad waste of Corn occasioned by "extraordinary thick seeding," "predatory birds, vermin," &c., &c., and promised to give our remarks on the "still more aggravating waste of the grand staple of human food, occasioned by the abominable practice of drinking to excess strong ale, and ardent spirits, which we considered were not essential for the real sustenance of man."

It may be asked here, What has a temperance movement to do with gardening and agricultural pursuits? We will endeavour to show that such a subject is not out of place, and that its object is of great importance to the interests of both, and the welfare of our country at large. Without forcing attention on *total abstinence*, which we leave with all due credence to its advocates, and our more able contemporaries, who hold their views as irrefragable, we would let truth have its free course; it demands protection, submission, and our esteem.

We proceed to observe that temperance has a great deal to do with the interests of both those pursuits, inasmuch as the saving of the price of only *one* pint of strong ale per day, 3d., or a bumper of gin at the same rate, would purchase one square yard of land; and if repeated daily throughout the year, twelve square rods or poles, at £60 10s. per English acre, for the growth of Corn, or other necessary food; or it might be appropriated to building purposes, or some other profitable and enterprising avocations. It would otherwise hire one square rod, or pole of land, and at the rate of £2 per acre, per annum, viz., 365 rods, or two acres one rod five poles, at this fair-supposed rental of £4 11s. 3d., which would produce, by good cultivation, 100 bushels of Wheat, average remunerative value, say £15 per load, or 7s. 6d. per bushel, equal to £37 10s. a year; or it would otherwise produce, at a moderate calculation, 500 bushels of Potatoes, average value, say 1s. 6d. per bushel, equivalent also to £37 10s. a year (no mean consideration this! may be echoed from many a lip); but seeing by this small saving, and simple fact, viz., the sparing only of one paltry pint of ale, or threepenny worth of gin in a day, might be conducive of this much good, just let it be imagined, the immense breadth of land which might be purchased, or hired, even if it were at a higher rate; and also the greater production and saving of Corn, from the better appropriation of five to ten useless pints or glasses, that the thousands and tens of thousands of our wretched fellow-creatures are daily and yearly in the habit (for it is nothing more) of wastefully and wickedly consuming their own and their neighbouring nations' produce, to the destruction of their souls and bodies, and ultimately causing premature death to themselves; and to others, famine prices, war, and bloodshed, inevitably to follow in their train!

The amount of grain consumed for the express purpose of intoxicating drinks, as truly given by temperance statisticians is astonishing (the figures we cannot now lay our hands on), but it is beyond all conception to considerate minds; and if spared, as it might be, to a great extent, all grades of society, from the highest ranks of distinction, to the lowest capacities, would be more in unison, and more healthy, long-lived, happy, wise, and good; and this country would soon become famous for exporting, instead of importing Corn! for, be it remembered, no other country is yet able to compete with our own in point of agriculture; and, what is more gratifying, it is still progressing, and on the march of improvement. "Waste in Corn" might be pointed out in various other ways, than by those we have described, namely, by "Destructive birds and vermin," "Extravagance in thick seeding," and finally, by "Excessive drinking," if time and space permitted.

We beg submissively to leave this subject to better and

more able contemporaries, who have more time on their hands for scribbling, and producing statistical and satisfactory proofs, than ourselves. Only let it be borne in mind, that waste causes woe, and want, and sorrow, and sickness, and ultimately, premature death!—HARDY AND SON, *Seed-growers and Seedsman, Maldon, Essex.*

FUMIGATING WITH TOBACCO.

I SEE that a correspondent, signing himself "J. G." wishes to know how to fumigate a greenhouse by tobacco-paper. I beg to acquaint him how I proceed in that operation, although rather diffident in offering to appear in your columns, having only a small house, containing a miscellaneous collection of about three hundred plants, I never fumigate my house until there is a calm evening, deeming it economy, as during a wind the smoke is driven out of the house without its doing its share of work.

Now, for the mode:—I have an old tin steampan, such as housekeepers use in steaming Potatoes, in the bottom of which, I put about two inches of charcoal, broken about the size of walnuts; then put it upon a fire to ignite, which done, I then prop it upon two empty pots in the middle of the house; and then fill it up with tobacco-paper, previously moistened; and then leave it to do its murderous work upon the enemy, and in a few minutes the house is in a dense mass of smoke. I never leave it burning, because it is liable to burst into a flame, as I find that is very injurious; to prevent which I pour a little water on the top. Previous to commencing, ascertain that the foliage of the plants are all dry. Two small doses are better than one large one; about one pound of tobacco-paper is sufficient for a house eighteen feet by nine feet. Syringe in the morning after smoking. The above is cheap, as well as efficacious.—NEWCASTLE.

[Your enclosed flue, and your proposed ventilator, will both answer your purpose.]

AUSTRALASIAN BOTANIC AND HORTICULTURAL SOCIETY.

THE Spring Exhibition of this Society took place September 19th, and we are glad to say that the brilliancy of the sky, and the mildness of the weather, reminded us of the palmy days of this institution, when we ventured to trust in high and hopeful aspirations of the great celebrity to which it would ultimately attain. Sadly, however, have we been disappointed, and though last year we permitted ourselves to renew our bright visions, and the commencement of the botanic year was full of better promise, still another year has waned away, and it has made no sign in the blank sheet which was to enrol the wonders and the blessings which the Australasian Botanic Society would unfold to us.

Contrary to all anticipation, the Exhibition was a remarkably good one. It would, perhaps, have been better, and gayer, and certainly more interesting to the multitude, if it had taken place a fortnight or three weeks later, when the more familiar plants would have been in bloom, and, perhaps, some of the exquisite specimens exhibited yesterday evinced some slight evidence of being forced too much. On the whole, however, we have no hesitation in saying that, so far as elegant flowers, rare and well-cultivated plants are concerned, the show surpassed its predecessors.

The garden of Mr. Smart took the chief prize of the day, for a collection of twelve miscellaneous plants, mostly well-grown and all remarkably healthy and showy plants. The collection comprised the following:—*Raphiolepis Indica*, (very beautiful and rare), *Centrocium lanthimum* (also rare and in good flower), *Tropæolum grandiflorum*, *Begonia manicata*, *Russelia juncea*, *Brunsfelsia confertiflora*, *Euphorbia splendens*, *Ardisia crenulata*, *Thysanotus strictus*, *Clanthus puniceus*, *Gesnera Zebrina*, and *Cereus Mallisoni*. Mr. Mort had also a beautiful collection of four Azaleas, which, amidst a great profusion of this beautiful flower, took the prize.

Mr. Woolley's collection (Creswick, gardener) of twelve

miscellaneous plants took the second prize, and in growth and cultivation certainly rivalled that of Mr. Smart. They comprised *Franciscea pohliana*, *Porphycocoma lanceolata*, *Melastoma malabathrica*, *Henfrea scandens*, *Cytisus racemosus*, *Pentas carnea*, *Aphelandra cristata*, *Clerodendron fragrans*, *Forsythea Grandiflora*, *Begonia Ingrami*, *Azalea* (seedling). In Mr. Woolley's collection of plants, too, appeared, what seemed to us, the best Gum plant in the show, though not in flower—*Begonia luxurians*. A very elegant collection of Roses, for the time of the year, with a variety of cut flowers, also did much credit to Mr. Creswick's skill and attention.

The prize for the best collection of nine miscellaneous plants was awarded to Mr. W. T. Shepherd. They comprised the following;—*Azalea India splendens*, *Bilbergia viridis*, *Russelia juncea*, *Euphorbia splendens*, *Diervilla rosea*, *Franciscea uniflora*, *Clematis Sieboldii*, and *Begonia manicata*. Mr. Shepherd had, also, a choice collection of cut specimens of flowering shrubs and climbing plants, and twelve very beautiful varieties of *Ranunculus*, the best we have seen for some seasons, and which certainly were entitled to a prize. We are at a loss to know why these, and the beautiful collection of *Camellias*, from Mr. Mort's garden, were left unrecognised by the judges.

Besides the *Camellias*, Mr. Mort's garden, as usual, sent forth a rich and varied collection of specimens. An *Oncidium papilio major*, was decidedly the "bright particular star of the exhibition," and two *Phalaenopses* were not inferior in beauty, if they were so in novelty. Mr. Mort had, also, a very splendid collection of Ferns, the best collection of six miscellaneous plants, comprising *Tropæolum tricolorum*, *Begonia manicata*, *Cantua pyrifolia*, *Tropæolum lobbianum*, *Franciscea Hopeana*, and *Epiphyllum Jenkinsonii*.

Mr. Baptist had a fine collection of Roses for the season, which received a prize. He had, also, a good collection of miscellaneous plants. Some fine *Polyanthuses* and *Primroses*, and a first-rate bouquet. Perhaps, one of the most beautiful exhibits in the show was a collection of *Peonies*, from the garden of J. Norton, Esq. The delicate beauty of one variety (*Papavaracea*), was the admiration of every beholder, and they had only to lament that they were not exhibited in a way to show off their beauty to the best advantage, as a ground of blue or green paper would have been infinitely preferable to white.

We have only to add, in respect to flowers, that a great untidiness, not to say coarseness, is evinced by exhibitors as to the manner in which they send their specimens in. Dirty rags and coarse, filthy flower-pots destroyed the effect of some beautiful specimens, and we think that the judges would do right to reject specimens not sent in for exhibition with a due regard to taste and decency.

We ought not to fail to make mention of some very interesting specimens of cotton and wool, dyed by Mr. B. Mc Gee, of this city (Sidney), with dyes extracted from the woods of this colony.

The show of fruits, though not varied, was very good of its kind. The collection of Oranges sent by Mr. Richard Hill exceeded anything we have before seen in the colony, and showed what we have often before stated, that while, from thorough indolence, and the luxuriance with which it grows in this colony, this valuable and delicious fruit has been long depreciated, care and attention will enable us to compete with the world in its production. Mr. Hill's collection consisted of eight varieties, the gem of which, undoubtedly, was a seedling from Teneriffe. The favourite *Siletta* was also seen to great advantage, and some Maltese (commonly called the Blood Orange) though small were rich and luscious in their flavour. Mr. Hill also exhibited some very fine Shaddocks, of a new variety (dwarf), which will, we predict, soon become a favourite in the colony. Mr. Vincent Carr also furnished a very fine collection of Oranges, some good Loquats for the season, and some excellent Lisbon Lemons. Two very beautiful and extensive collections of purchased fruits, from Mrs. Preston and Mr. Carr, of the Markets, divided the decision of the judges; and eventually, prizes were awarded to both. There was also a dish containing four Cherimoyers (custard apples), grown by Mr. Baptist, the finest and best grown we remember to have seen.

Of vegetables, we have not much to say, as the season is unfavourable; but Mr. Baptist is a host in himself, and his display was plentiful and luxuriant. The whole of the prizes were awarded to him.

The fineness of the weather assisted the attractions of the Exhibition, and on no former occasion have we seen a more numerous or more gay assemblage flock to these interesting reunions.

The band of the Eleventh Regiment was in attendance, and exerted itself with more than wonted industry and effect, and contributed much to the pleasure of the visitants.

We rejoice to say that the sum taken at the gates alone amounted to £127, independent of the tickets sold by the shopkeepers in the city.—(*Sidney Morning Herald*.)

QUERIES AND ANSWERS.

GARDENING.

GRAFTING THE GRAPE-VINE.

"Be good enough to inform me whether I can graft a *Muscat of Alexandria* on a *Black Hambro*; that is, whether a white will do on a black Grape. Also, what is the best time, and which is the best mode of grafting the above?—JAT."

[You may graft any one variety of the Grape Vine upon any other variety. Adopt the whip mode of grafting. Perform the operation just before the sap has begun to rise. Rub a little white lead over the edges of the wound, where the scion and stock join; bind up as usual with bass, and put a little moss over the whole to be kept slightly damp.]

APPARATUS FOR STRIKING CUTTINGS.—HEATING SMALL GREENHOUSE.—HARES BARKING TREES.

"IN THE COTTAGE GARDENER for November last, I see directions for using Minasi's Hatching Apparatus. I have not seen the apparatus itself, but from the sketch given in the above Number, it strikes me that it would be possible to give bottom-heat, either by means of water heated by the lamp, or dry heat, to a shallow bed of earth placed in a wooden or other frame for striking cuttings, even to the extent of some hundreds.

"If your ingenuity lead you to suggest a plan for this, you would confer a great benefit on amateurs, and enable them to dispense with an expensive hot-water apparatus. Pray think of this, and let us have your opinion before February next.

"Joyce's Portable Laundry Stove, delineated in the fly leaves of THE COTTAGE GARDENER. Could not this be safely used for warming a small greenhouse or conservatory, placing a pan of water on the top, to get rid of the injurious effects of dry iron heat?

"Your advice at page 152, of the November Number, as to gas tar round the stems of trees, to keep off rabbits, is dangerous. *Experto crede*. Some years ago, I applied it for this purpose to some twenty or twenty-five young Apple-trees, of two or three inches diameter. It killed the whole, and on examination I found it had penetrated through, from side to side. It is destructive to all vegetation. Not so, common tar, which is beneficial, and equally obnoxious to hares and rabbits, neither of which will approach it. Excuse the hint.—VERAX."

[There would be no difficulty in striking cuttings in a Wardian case, having a small tank beneath it for water, and heated like Minasi's Incubator. The portable Laundry Stove would do for a small greenhouse, if a tube communicating with the outer air was attached to carry off the gases given off by the fuel. We are obliged by your information about the tar. We have tried it upon large, old trees, and it did not kill them, but we never had occasion to apply it to young trees.]

MILDEWED WALL-TREES, &c.

"I have been told that corrosive sublimate is very destructive to mildew, and that trees on old walls may be cleared of this, as well as insects, if walls, trees, and all, be

well washed with a solution of it. I have not tried it myself, neither do I know the proper quantity of corrosive sublimate that should be put to a given quantity of water. I merely throw out the hint for your readers to experiment upon, and hope they will report the result.

"N.B. The trees must be washed when destitute of foliage, I imagine.—H. HOWLETT."

[It is quite possible that corrosive sublimate would kill the fungus which constitutes the mildew disease; but it is far too virulent a poison to be employed for such a purpose, except in cases where sulphur has failed. Have any of our readers had any experience with it?]

HISTORICAL NOTES ON THE INTRODUCTION OF VARIOUS PLANTS INTO THE AGRICULTURE AND HORTICULTURE OF TUSCANY: a summary of a work entitled *Cenni storici sulla introduzione di varie piante nell'agricoltura ed orticoltura Toscana*. By Dr. Antonio Targioni-Tozzetti. Florence, 1850. — (From the *Horticultural Society's Journal*.)

(Continued from page 192.)

A second, but smaller and coarser species, *Nicotiana rustica*, much grown in some parts of South-eastern Europe, is generally said to be a native of Europe and Asia, but this is a mistake; like *N. tabacum*, it is of American origin. So also is the long whiteflowered Shiraz tobacco, recently published under the name of *Nicotiana persica*, but which is a mere variety of the *N. longiflora*, a species not uncommon in South America, and introduced from thence, like the others, since Columbus' discovery.

Amongst the Cassias supplying the *Senna* leaves of our Pharmacopœias, the annual species (*Cassia obovata*), introduced most probably by the Moors during their dominion in Sicily, from Egypt and Arabia, was much cultivated in Italy, especially in Tuscany, during the sixteenth and seventeenth centuries. It is now totally neglected, nor would it be profitable except in the Maremma, where its cultivation is strongly recommended by Prof. Targioni.

The *Castor-oil plant*, or *Palma-Christi* (*Ricinus communis*), was known to the ancient Hebrews, Egyptians, and Greeks, as supplying an oil for burning, for which purpose it was much cultivated in Egypt, Arabia, and India, and is so to this day, although the consumption of the oil is now for medicinal rather than economical purposes. It had never, till of late years, been cultivated in Italy, but is among the plants recommended for fertilising the Maremma. Its native country is uncertain. The south of Europe, the coasts of Africa, and East India, are generally indicated, but it is certainly not wild in India, and apparently only self-sown in the south of Europe. It may, however, be really indigenous in Upper Egypt, and other districts of Northern Africa.

Of *Fruit-trees*, the first in importance for the Italians is the *Olive* (*Olea europea*). Its great productiveness, longevity, and hardihood against every thing except cold, have extended it over all countries whose climates it will bear, and the origin of its cultivation is lost in the remotest ages of antiquity. From the Holy Scriptures, as well as from the early Greek writers, it appears to have been as general in their days as in ours in Greece, the Holy Land, and North Africa. There has been some discussion as to the period when the Romans first planted it in Italy, Pliny asserting, on the authority of Fenestella, that it was unknown in Italy, Spain, or Africa, in the time of Tarquinius Priscus (in the year of Rome 133). Yet Pliny also states that the Gauls' inroad into Italy at about the same period was for the acquisition of oil, grapes, wine, figs, &c. However that may be, it is very certain that the Greeks long preceded the Romans in the cultivation of a number of varieties of olive more productive than the wild plant.

The olive is, perhaps, the longest lived amongst European trees. The youthful vigour of individuals known to be three or four hundred years old; the great tenacity of life observed in the root or stock, throwing up suckers, for instance, in olive grounds abandoned and converted into sheep walks for upwards of two centuries, and that in a climate where the branches are frozen down two or three

times every century; the numerous traditions of trees supposed to be eight hundred, a thousand, or more years of age; the extraordinary manner in which it will resist every ill-treatment inflicted on it by neglect or wantonness, and which gives rise to the common saying in the South, that you cannot kill an olive-tree—all render it more than probable that those venerable olive-trees so beautifully described by Lamartine as now overshadowing the vale of Gethsemane are the identical trees under which our Saviour underwent his blessed agony.

The olive grows naturally in the East, from Greece and Syria to Persia and Afghanistan, and is, without doubt, really indigenous to the whole of that region. It is also found wild in great abundance in Southern Italy, but how far it may there be the degenerate offspring of self-shown olives from cultivated sources, is a matter of much dispute among Italian writers, and is here discussed by Prof. Targioni, who concludes with much plausibility that it is a true native.

The *Grape Vine* (*Vitis vinifera*) must, as already observed by Pliny, be ranked amongst trees on account of the prodigious size it will attain.* This may be more especially observed in the Maremma, where it grows wild in the greatest abundance. It appears to be there, as in other parts of the Southern Europe, truly indigenous, extending from thence over the greater part of South-central Asia, for the *Vitis indica*, on the testimony of the more recent Indian botanists, is by no means specifically distinct. From these wild vines have evidently been raised the innumerable varieties cultivated over the greater part of Europe, Asia, and North Africa, and now carried out to all parts of the globe where the climate will admit of it. But the period when it was first taken into cultivation, is lost in the obscure ages of antiquity. We read in the Genesis, that after the flood Noah began to plant the vine; the heathens ascribed its first introduction to their fabulous heroes or divinities, Diodorus Siculus to Osiris, Servius to Saturn, and in the most ancient times Italy was called *Ænotria* from the wine that it produced.

We have already observed that the varieties of the grape are most numerous; they are also often so strongly marked as to cause many writers to deny the possibility of their having all sprung from the wild vine, but their apparent permanence is, in most instances, only due to their universal propagation, by cuttings or layers, not by seed. Pliny records eighty kinds, and many others are mentioned by Virgil, Columella, Varro, Macrobius and other writers, which it is now impossible to recognise with certainty amongst the modern varieties, amounting, in some collections, to above three hundred. Fée, Gallesio, and others have, however, endeavoured to identify some with more or less plausibility, of which the following are a few instances:—

The *Apiana* of Pliny, or *Apicea* of Cato, is supposed to be a muscat imported from Greece, and it is believed that most of the muscat-flavoured varieties were originally raised in the Archipelago.

The *ambrosiaca* is believed to be another muscat.

The *gracula* is the Corinth stoneless, or currant grape.

The *rhætica* the uva passa of Spolito, another stoneless and currant grape.

The *venicula*, *sircula*, or *stacula*, is the marzemina of the Venetians.

The *dactylites* is perhaps the uva galletta of modern Italy.

The *trifera*, the uva di tro volte from Chio.

The *picina*, perhaps the uva colore.

* Among the instances given of enormous vines, we may quote the following; Pliny records a vine in the Portico of Livia, which overshadowed the whole area used as a promenade, and yielded annually twenty-two amphoras (154 gallons) of wine; the same writer states that he had seen at Populonia a statue of Jupiter, made of the trunk of a vine, and that the columns of the temple of Juno at Metapontus, and the steps of that of Diana of Ephesus, were also of vine wood. In more modern days, Soderini mentions a vine in Portico di Romagna, which extended over 1000 braccia (2000 feet); in the *Mém de l'Académie de Paris* for 1737, a muscat vine at Balancon, is described, which at twenty years old produced 4206 bunches of grapes. Giovanni Targioni-Tozzetti, our author's grandfather, in his travels in Tuscany, quotes one in the woods near Montebamboli, the trunk of which two men could not embrace. Santi found a vine at Castellottieri in the Maremma, torn up by a storm in 1787, whose trunk is preserved in the botanic garden at Pisa, with a stem five-and-a-half feet in circumference; and Prof. Targioni has himself recorded in the article "Botanical Chronology" in the *Dictionary of Natural History*, printed at Florence by Batelli, two vines near Figlioli, in the upper Val d'Arno, with trunks five feet in circumference. The doors of the Cathedral of Ravenna are made of vine wood.

The *trebulana*, the Trebbiano, yielding a wine celebrated for its excellence by Tasso.

Others of the Roman names are derived from the countries whence the varieties were imported, such as the *biturgica* from Bordeaux, the *phaia* from Illyria, the *prusina* from Broussa in Anatolia, the *agios* from Ægia near Corinth, the *alexandrina* from Alexandria in the Troas, the *aminea*, a highly prized variety, from Aminei near Falerno, &c. The eagerness to import into Italy the vines of other countries celebrated for the excellence of their wines has continued to the present day, Prof. Targioni adducing many proofs of its prevalence in the middle ages. It is a pity the Italians do not, at the same time, introduce the modes of treatment and manipulation, to the deficiencies in which must be mainly attributed the general inferiority of Italian wines to those produced in similar climates in France and Spain.

Great attention has been paid in Tuscany to the cultivation of *dessert fruits*, from the time of the ancient Etruscans, as attested by numerous early Roman writers, and continued to the present day. The discovery of the cultivation of fruits was attributed by the Romans to Janus, their amelioration and extension to Vertumnus and Pomona, all three of them Etruscan divinities; and the origin of the multiplication of the garden varieties is therefore lost in the fabulous ages. Pliny, and other even earlier geoponical writers, give indications of no small number of varieties of pears, apples, cherries, plums, &c., of which it is probable that several have descended to us, but from the mere names handed down without descriptions, it is hopeless to attempt to identify any considerable proportion of them; moreover, it is very certain that entirely new varieties are daily introduced, whilst several of the old ones are undoubtedly lost.

The flourishing times of the Florentine republic were peculiarly favourable to the development of horticulture and agriculture. The unquiet life which the nobles and great families led within the town, exposed as they were to the suspicions of a turbulent populace, induced them to retire for security to their estates, occupying themselves with their improvement, whilst the rich merchants and magistrates spent their holidays in their suburban villas, which they adorned with gardens, importing plants from all countries, and especially introducing new fruits from Greece. A manuscript piece of poetry in the Magliabecchian library, entitled "Verses (Capitolo) on the table of fruits to be offered to a guest," shows the great variety cultivated in the neighbourhood of Florence in the fifteenth century. Three baskets are there represented; the one full of grapes, figs, pears, apples, lemons, &c.; the second with cherries, plums, peaches, apricots, and other stone fruits; the third with almonds, walnuts, oranges, citrons, chestnuts, and several inferior fruits; thus supplying a list of those most generally known at that period. The Grand Dukes of the Medici family paid particular attention to the enrichment of their gardens. Father Agostino del Riccio informs us that Cosmo I. was the first to introduce plantations of dwarf fruit trees, and that he and his successors annually increased the number of varieties introduced and cultivated for their tables.

The *Pear* (*Pyrus communis*) and *Apple* (*Pyrus malus*) are found in their wild state in the mountain woods of all Italy, as well as of the greater part of Europe, and from these indigenous species have been raised the whole of our orchard and garden varieties. Their amelioration by cultivation, and the perpetuation of varieties by grafting, have been celebrated by poets from the time of Ovid, and continue to the present day. Pliny enumerates thirty-nine different pears known to the Romans, several of them being also mentioned by Virgil, Cato, Columella, Juvenal, Macrobius, &c. Fée has endeavoured to identify some of them with modern French varieties, and Gallesio with Italian ones, as in the following examples:—

PLINIAN NAMES.	SUPPOSED CORRESPONDING MODERN NAMES.
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Amerima serotina . . .	San Tommaso.
Lactea	Perle or Blanquette.
Dolabelliana	Winter Bon-Chrétien.
Falerna succosa . . .	Bergamot.
Favoriana rubra . . .	Large muscat.
Superba parva	Little muscat.
Hordearia	Common muscat.

PLINIAN NAMES.

SUPPOSED CORRESPONDING MODERN NAMES.

Mustea	A variety of Bon-Chrétien.
Picena or picentina . .	Spina.
Pompeiana mammosa . .	Campana.
Viridis	Spadonna vernina, considered by Gallesio as a most ancient Italian Pear.
Myrapia	Guignoline.
Voloma	Another Bon-Chrétien.

In Tuscany, under the Medici, we find, in a manuscript list by Micheli of the fruits served up in the course of the year at the table of the Grand Duke Cosmo III., an enumeration of two hundred and nine different varieties of pears, and another manuscript of that time raises the number to two hundred and thirty-two. Among them grafts of the Dorice pear of Portugal were introduced by the same Grand Duke, at a cost of one hundred golden doubloons, whence it received the name of *Pera cento doppie*, by which it is still known, as well as by that of the *Ducal pear*.

(To be continued.)

TO CORRESPONDENTS.

POULTRY-KEEPER'S ALMANACK (*G. H. Scobell*).—You will have seen by the advertisement that its price is *sixpence*; and that it may be had of W. S. Orr and Co., Amen Corner, after the twentieth of this month.

AMBURY IN MANGOLD WURZEL (*R. Gough*).—The disease called "Fingers and Tocs," which is the Ambury, is no sign of degeneracy, but arises from the maggot, or larva, of a fly. You will have seen some directions recently for saving its seed. If you require more information, please to write again.

SIKKIM RHODODENDRONS (*T. v. S.*).—You will find the best description of these in Dr. Hooker's work upon the Rhododendrons of the Himalaya. The *Pomological Magazine*, quoted by Mr. Beaton, has long ceased to be published.

HOUSE LIGHTEN BY GAS (*A Beginner*).—It is not true that you cannot keep plants in your dwelling, thus lighted, if you use the gas of the Great Central, or other Company, that takes care to purify its gas thoroughly.

FLOWER-GARDEN PLAN (*Une jeune Fille*).—Your plan is very well explained. 14 is best in grass, with a pillar Rose in the centre; and four dwarf standard Roses in the four corners—say, *Duchess of Sutherland* and *Baron Prevost*, at opposite corners; and *Pio Nona*, with *William Jesse* in the other corners. No rock-work, no rising of that ground, and no turf in 13. The corners of the grass ought to be rounded, at 1, 2, 3, and 4, the grass to be of equal width round these beds. The four beds in the centre, 9, 10, 11, and 12, ought to be in China, and no where else, on the face of the earth. Pray turf them over, and put two circular beds on each side of where they stand, half way between 6 and 8, and between 5 and 7; have nothing where that group stands. The centres of 1 and 4 to be of *Scarlet Geraniums*, and *Red Verbenas* round, if you have not enough of *Scarlet Geraniums* to fill those two. Then 2 and 3 to be *yellow Calceolarias*, with your dark *Calceolarias* round them. *Cinerarias* are of no use in beds, except the blue *Ameloides*. The yellow *Eschscholtzia* would suit you, and make a bed of itself, by sowing a small packet of seeds in April; and if you could get the blue and the white *Campanula Carpatia*, each of them would make a bed, and remain for years, like the *Penstemons*. And if you had the large yellow *Eurothera macrocarpa* to match with the small one, you would be "set up." Then a few *Clarkia*, dwarf *Larkspur*, *China asters*, *Gillia tricolor*, and *Collinsia bicolor*, by way of annuals, with a few more *Roses*, and they might be in the very centre of any of the beds; all of them would suit your style.

NAMES OF FERNS (*An Under Gardener*).—1. *Cyrtomium falcatum*. 2. *Pteris longifolia*. 3. *Auremia fraxinifolia*. 4. *Adiantum pubescens*. 5. *Asplenium marinum*. 6. *Pteris serrulata*. 7. *Cassebeera bastata*. 8. *Asplenium bulbiferum*. 9. *Doodia caudata*. 10. *Nephrodium exaltatum*. These were one of the best lots of specimens that have come to our hands to be named. Every specimen showed the true character, which saves us much trouble and time.

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Advertisements.

On the 21st of December will be Published, Price 6d.,

The POULTRY-KEEPER'S POCKET ALMANACK

AND
Diary of Proceedings in the Poultry-Yard.

By the EDITORS of "THE POULTRY BOOK,"
Besides the usual contents of an ALMANACK, it will comprise a RULED DIARY, with the requisite directions for recording the transactions of the Poultry-Yard. Also directions for the Management of Poultry; Drawings of Spangled, Pencilled, and Laced Feathers; with much other useful information.

Published by W. S. ORR & CO., Amen Corner, Paternoster Row, London; and to be had of all Booksellers.

WEEKLY CALENDAR.

D M	D W	DECEMBER 19—25, 1854.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
19	Tu	Engis humeralis.	29.605—29.483	35—28	E.	—	5 a 8	50 a 3	sets.	☾	2 42	353
20	W	EMBER WEEK.	29.843—29.724	37—34	N.E.	01	6	50	4 a 4	1	2 12	354
21	Th	St. THOMAS.	29.995—29.969	36—33	N.E.	01	6	51	5 21	2	1 42	355
22	F	Sun's declination, 23° 28' s.	30.005—29.075	37—29	N.E.	01	7	51	6 47	3	1 12	356
23	S	Engis ferruginea.	29.921—29.793	41—29	N.	04	7	52	8 20	4	0 41	357
24	SUN	4 SUNDAY IN ADVENT.	30.227—30.065	38—24	N.E.	—	7	52	9 46	5	0 11	358
25	M	CHRISTMAS DAY.	30.201—30.199	36—14	N.E.	—	8	53	11 9	6	bef. 19	359

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 44.3°, and 33.2°, respectively. The greatest heat, 57°, occurred on the 24th, in 1827; and the lowest cold, 10°, on 24th, in 1830. During the period 112 days were fine, and on 77 rain fell.

No well-educated man of taste will ever make use of a foreign word when he can express his meaning as fully by a word of his own native tongue. It is worse than pedantry to do otherwise; for it renders obscure to some readers that which might have been intelligible, at first sight, to all, without any reference to a dictionary. We endeavour to use none but good old English words ourselves, and when a correspondent uses such words as "aridity," we scratch it out, and replace it by "dryness." We were propitiated, therefore, by the very title of the series now before us for notice; for it falls in with our humour and judgment. We have had "Cyclopædias," and "Encyclopædias," with all sorts of forerunning names, from "Chambers" down to "Metropolitana." Yet, "Cyclopædia," and "Encyclopædia," mean neither more nor less than *The Circle of the Sciences*; and, at last, we have one so named in plain English—a name which the million can understand; and it is especially appropriate for a work which the million may buy, because it is publishing in twopenny numbers.

Modern enterprise, and modern steam-presses, have rendered the depreciatory use of the word "twopenny" quite obsolete; and, from the days of the "Penny Magazine," down to the three-halfpenny "Home Companion," some of our best literature has appeared in serials not rising even to the valuation of twopence.

There is no marvel in this, for men, the very foremost in the staff of the arts and sciences, now strive for celebrity in the glorious effort to impart and render intelligible the best of knowledge to all. This is no easy task. A man of science can readily convey his meaning to one equally skilled; but, to impart his knowledge to the unlearned is so much more difficult, that very few can bring their language down to the comprehension of the mere learner. Every craftsman will readily understand this when he reflects how much more easily he can render himself understood by one of his own trade than he can by one of his best-educated customers.

"The Circle of the Sciences" is an attempt, and it is a very successful one, to impart, within a small compass, in popular language, and with explanatory accompaniments, every department of Science. Good progress is made in Physical Geography, Geology, Comparative Anatomy, and Mathematics; all the treatises being by such men as Professor Owen, Sir William Jardine,

Professors Ansted, Young, and Tennant; with many others of high celebrity.

We select for quotation, as most relative to our chief theme, "Botany," by Professor Smith; and never before was the microscope brought to bear so luminously upon the structure of plants,—nor, before, were its revelations so brought before us by the engraver's art. We will quote from a portion of the least illustrated part:—

"The uses of woody fibre are very varied, and most important, and may be divided into two categories,—1st, such as benefit the plant; and 2nd, such as benefit man.

"1st. Such as benefit the plant.

"It is the chief organ of the circulation in all wooded plants, and for this purpose pervades the plant from the root to the branches, and even to the minutest leaves and flowers. The current in this tissue is slow and uninterrupted, and is directed upwards from the shoot through the stems to the leaves, and downwards from the leaves through the bark to the root. Thus its current has a twofold direction; the ascending and chief one being for the purpose of taking the raw sap from the ground, to be digested in the leaves, and the descending being devoted to the removal from the leaves of the digested sap, to be applied to the purposes of the plant, and also of the refuse matter to be carried to the roots, and thence thrown out into the soil as a noxious material. These functions are carried on more vigorously during the spring and summer seasons; but it is probable that even in the depths of winter it does not cease.

Another function of woody fibre is to be the store-house of the perfected secretions. It is well known that as trees advance in life, the wood assumes a darker colour, and more particularly that lying near to the centre of the stem. This is due to the deposit of the perfected juices in the woody fibre at that point; and when age has matured the tree, it is probable that the woody fibre so employed is no longer fitted for the circulation of the sap; and also, that the perfected sap, when once deposited, does not again join in the general circulation. The dark colour of the heart of Oak, as contrasted with Oak of very recent growth, is an illustration of this fact, as is also the deep colour which is met with in ebony and rose wood.

"A third duty under this head is that of giving stability to the tree. It only requires a moment's reflection to enable the mind to appreciate the vast power of resistance which is placed in forest trees. The Oaks of an English forest have stood a thousand years, notwithstanding the hurricanes and storms to which they have been yearly subjected; and a familiar illustration of the most violent storms, of which we hear and read, is that of the tearing up by the roots of the large forest-trees. How mighty must be that power, which can withstand influences so terrific as those which each person must have occasionally witnessed! This power is partly due to the mere mechanical hold which the roots have of the soil; but the tenacity of that hold is almost entirely due to the woody tissue contained in the roots and stem. Again, it is no uncommon occurrence in our old English parks to find branches of old trees which stretch from the trunk to the distance of fifty feet, and which in circumference are as large as trees of considerable growth. These do not stand perpendicularly from the ground, but pass out of the stem at an angle, which is, in some instances, nearly a right angle, and must, therefore,

* Orr's Circle of the Sciences. W. S. ORR and Co., Amen Corner, London.

be kept from falling directly in opposition to the effects of gravity. The strain exerted by such a branch is enormous; and yet the branch is maintained in its position for hundreds of years by the simple cohesive strength and tenacity of a series of woody fibres, each one-sixth smaller than a human hair, and too minute to be appreciated by the naked eye. It is probable that no mechanical agency at present in operation could effect that which is thus so readily effected by nature with the most simple agencies.

"2ndly, Such as benefit man.

"We do not refer to the almost infinite uses to which wood, in boards or masses, is applied by man, and the vast multitudes of beautiful objects which his ingenuity has enabled him to prepare out of the varieties of wood which nature has so bountifully provided.

"Not less useful is the same woody fibre, when reduced to very minute bundles or threads.

"When the fibres are obtained in tolerably large bundles they are used in place of bristles for street brooms, and especially when obtained from the Cocoa-nut Palm.

"The flax and hemp which are imported so largely into this country, consist of woody fibre, obtained not from the wood of large trees, but from the stems of slender plants. From this raw material, ropes, sacks, linen, lawn, and other textile fabrics, are now made, as some of them have ever been by all nations. Uncivilized, or partially civilized nations, have been accustomed to use the bark of various trees offering this wood in a very divided condition; and from this have prepared ropes and other articles of utility. It has long been known that cordage of a very strong kind was used by the ancient Egyptians, anterior, in all probability, to the building of the Pyramids; and Mr. Layard has recently exhumed sculptures which show that the yet more ancient Assyrians removed their gigantic winged bulls and other objects by cables of great size and strength.

"The bark of the lace-tree (*Lagetta lintearia*) yields a net-work of woody fibre of exquisite beauty, and of great utility, and is used by the natives of that clime as a ready prepared fabric.

"An indisputable proof of the antiquity attaching to the use of this fibre is afforded in the fact, that the mummy cloths of the ancient Egyptians, which are nearly five thousand years old, are found to be composed of this material.

"At the present day, this tissue is abundantly used, and is derived from very various sources. Its relative value depends upon the fineness and evenness of the fibre, and upon its elasticity. It has been found that certain kinds of flax have very great powers of resistance when exerted in a straight line, but readily break when they are bent. This is the case with the New Zealand flax; and its brittleness is to be attributed only to the nature of the material deposited within the tube. The flax obtained in this country, in Ireland, and India, from the *Cannabis*, has less resisting characters; but as it does not break so much in the process of hackling, has a higher marketable value. The Pine-Apple fibre is very capable of minute subdivision, and is very resisting, and consequently very fitted for the manufacture of fine fabrics. Cocoa-nut-palm fibre is also very strong from the presence of secondary deposits.

"The cost of flax has induced mercantile men to use woody fibre of less durability, but at the same time of a less costly kind—such as that derived from the China-grass, a species of *Neule* (*Urtica*); and from it much of the less durable linen cloth and pocket-handkerchiefs are now produced. It is well known that the tissue now under consideration occupies a medium between silk and cotton, as it regards resistance, durability, and cost.

"Silk is the produce of a member of the animal kingdom, and occupies the highest position in the qualities referred to. Labillardiere ascertained that bundles of fibres of equal size, of silk, flax, and cotton, gave the following unequal powers of resistance, on the application of a weight:—

"Silk supported, without breaking, a weight of 34lbs.	
"New Zealand flax (<i>Phormium tenax</i>)	23 $\frac{4}{5}$
"Hemp (<i>Cannabis</i>)	16 $\frac{1}{3}$
"Flax (<i>Linum</i>)	11 $\frac{1}{2}$
"Pita-flax (<i>Agave Americana</i>)	7

"The resisting powers of cotton are much below the lowest now indicated.

"In order the better to appreciate the characters of these textile materials, single fibres of each have been selected, and placed side by side, and to these have been added hairs, or fibres of wool, and silk. These have not only been used largely for centuries in the manufacture of woollen cloths, but the former is found woven with cotton in mummy cloths obtained from Otaheite.



AGAVE AMERICANA, OR FLAX PLANT.

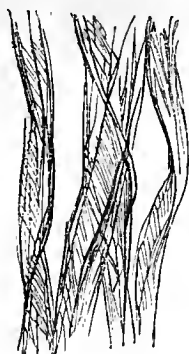
"The last use to which we shall now refer, is that of affording saccharine juices to man. This is known familiarly in this country in the wine obtained from the fermented juice of the Birch-tree (*Betula alba*). It is still better known in the Northern and Western States of America, and in Canada, from the sugar-yielding Maple (*Acer saccharinum*). This is still a greatly valued product in the less accessible parts of the country; but the introduction of the cane-sugar of the Southern States is gradually supplanting it in public estimation. The sugar obtained from it is very brown, but sweetens well, and will probably be one of the treasures of the happy housewife, in the fertile paradise of the "far west," for many years to come. In both of the above instances the juice is collected in a similar way—viz., by boring one or more holes into the stem of the tree at the period of the year when the sap has most accumulated; and, as the sap exudes, collecting it in vessels placed at the foot of the tree. The sugar is thence obtained by mere evaporation and subsidence; but the wine requires the subsequent process of saccharine fermentation.

"The spruce-beer in use in Norway, and the refreshing juices of India, are obtained in a similar way, and from the same vessels—viz., woody and pitted tissues.

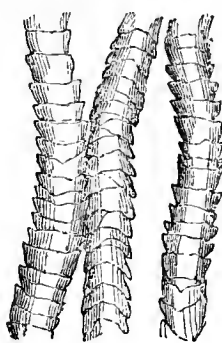
"Palm-wine is a delicious beverage, obtained from various species of Palm, but especially from the Cocoa-nut Palm (*Cocos nucifera*), the Gomuto Palm (*Saguerus saccharifer*), and the magnificent Palmyra Palm (*Borassus flabelliformis*). The latter is the most widely distributed of all the Palm tribe, since it inhabits all the various regions of the Continent and Islands of India. Mr. Fergusson, in the first illustrated book which proceeded from Ceylon, has given a most valuable account of the Palm-trees of Ceylon. We counsel our readers to peruse it attentively, and especially that portion which describes the Palmyra Palm, and its products. The juice is procured by crushing the young



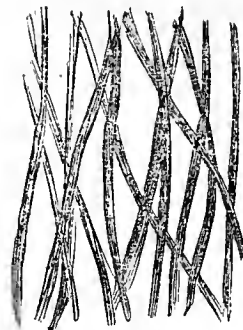
A



B



C



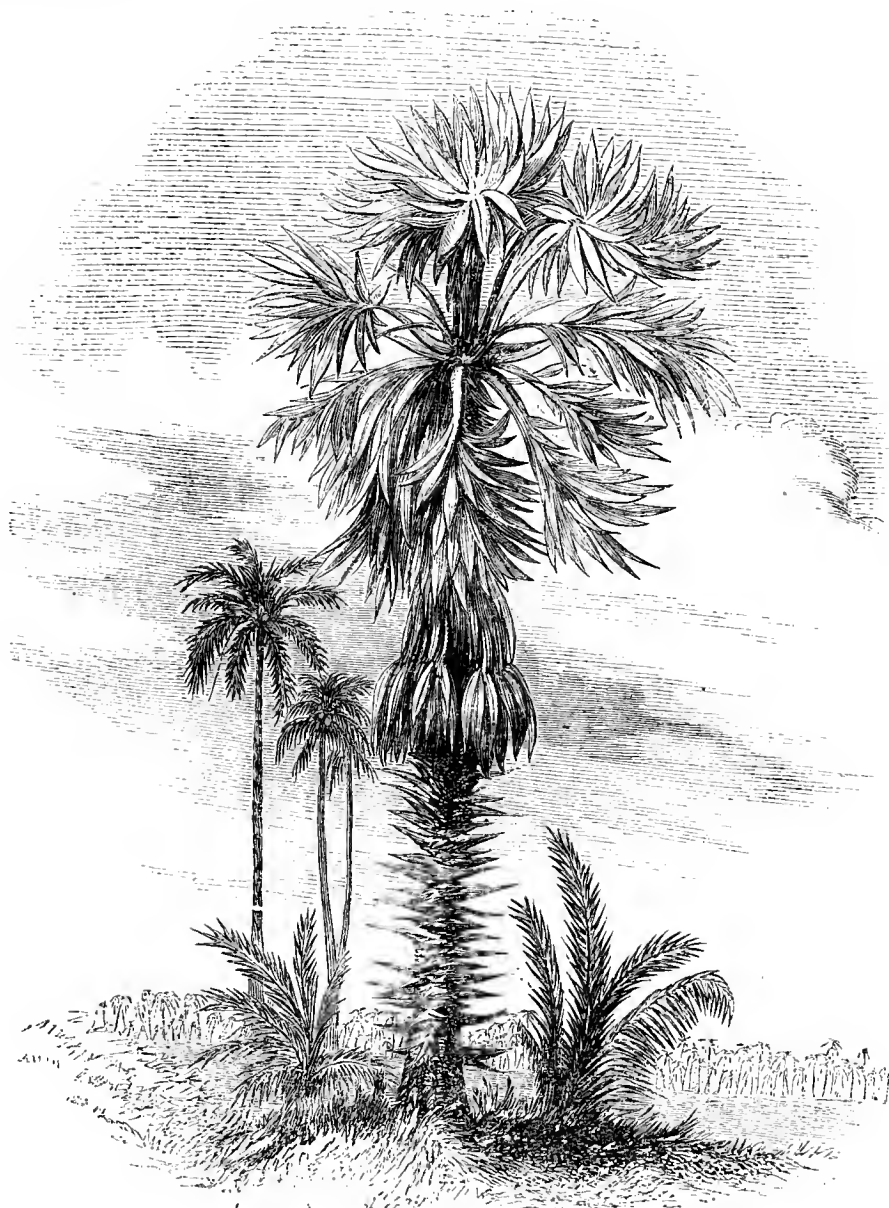
D

Fibre of flax, A; of cotton, B; of wool, C; and of silk, D; placed side by side, so that their relative size and markings may be readily contrasted. The fibre or cells of cotton are manifestly much thinner and less resisting than those of the other substances.

inflorescence, and cutting off the upper part. It is then collected in a vessel attached to the new end, and the daily discharge of the sap is facilitated by cutting a new slice every day. The fresh sap, called *taree*, or *toddy*, is very refreshing; and, if allowed to evaporate, yields a deposit of coarse sugar, or *jaggery*. When fermented, it becomes a very excellent wine, and the most intoxicating of all tropical beverages.

"The size of woody fibre varies from one 150th to one 3000th part of an inch, and is the largest in hot climates, for the reasons already indicated.

"The position of woody fibre is readily determined. It constitutes not only the stems of wooded trees, but is found in single bundles in the stems of delicate herbaceous plants, and may be readily seen there when the stem is torn across. In a similar manner it occupies the thin cuticle of herbs, and may be readily observed in the ridges, or veins, which run from the root upwards. It is also met with in the bark of all trees, in the veins of leaves and flowers, and even accompanying the spiral vessels into the fruit of plants."



THE PALMYRA PALM (*Borassus flabelliformis*) or yielding *Palm Wine*.

NEXT in our list for notice come the characteristics of the MALAY FOWL.

In this bird the *Plumage* is varied in respect of colour, good specimens being found of different shades of red, and deep chesnut in combination with rich browns. There are also black and white sub-varieties, in each of which the plumage should be uniform. The hackle of the Cock thin at the base of the neck, which is of great length; tail black, of medium size, and drooping. Hen's plumage varied: those of a very glossy, but clear, brown or chocolate, to be shown with the red and chesnut cocks. Feather to be hard and close in both sexes.

Form of the Cock erect and tall; head long, with a stout, curved, yellow bill; eye somewhat depressed, but of great brilliancy; comb wart-like, and with face, wattles (which are diminutive), and the skin beneath the lower mandible, intense crimson; back falling rapidly to the tail; breast wide and deep; thighs and shanks (which are yellow) strong, though greatly elongated; foot large and powerful.

The hackle of the Hen with the same peculiarity as has been noticed in the Cock, but her tail is less depressed than his; in her proportions and features generally, she should closely resemble the male bird.

There are sub-varieties of the Malay which are termed "Rangoon" and "Chittagong" Fowls. The former of these being a pile bird; the latter, grey, with dark markings. These last, however, are frequently open to the charge of being cross-bred, by an intermixture, probably, of Dorking blood.

Weight.—The adult Cock should not be less than 8lbs., nor the Hen than 7lbs. This estimate, however, is often greatly exceeded.—W.

OBSERVATIONS ON THE PAST SUMMER, AS TO SOME FRUITS.

It is scarcely necessary to remind our worthy readers that the past summer, as regards gardening affairs, has been an extraordinary one. Those not immediately engaged in gardening may fancy this somewhat overcharged; but I really must lay claim to a little impartiality in this matter, having been a witness to many extreme summers, as to their bearing on horticulture, commencing with, I think, 1815. I am certainly not well versed in meteorology; but I can, at least, pretty well remember the effects of weather, as to a practical view of the subject.

That it has been what is commonly termed a fine summer, surely no one will dispute; tourists, and ladies and gentlemen who travel about much, can, I dare say, attest this; but I seek to show, that the great amount of solar heat and light we enjoyed was of a rather unusual character, and not only of immense benefit to the products of the present year, but sure to exercise a most important influence on the succeeding year, more especially as regards horticultural affairs. As regards fruits, it is not easy to overrate its importance. I have, recently, been examining closely the wood of various fruit-trees, and, in general, I find the condition and character of the wood just such as we might be led to expect. I had made up my mind, in the spring, to keep down all useless spray in an unusual degree; and this determination was carried out, for when labour fell

short, I had recourse to the dubbing shears. The effects of this practice is highly satisfactory; and if so necessary in a summer possessing almost double the usual amount of sunshine, how much more so in dull and moist summers? I verily believe, that one-half the bad setting complained of is the result of badly-ripened wood, and, of course, of badly-organised blossom-buds; indeed, I am quite assured it is the case.

How often, in our tender Pears, do we find blossoms expanding three weeks, at least, after the proper period, especially after bad summers? A few scanty blossoms, perhaps, expand boldly at their proper period; and as they fall away, or even long afterwards, these abortions appear, and if examined carefully, most of them will be found monstrosities. Certainly, it may be urged, that in the character of a blossom-bud they are a late production of the previous summer. Such may be the case with some; but can any one expect that an embryo blossom-bud, smothered with rampant shoots from May to September, shall produce a development equal to those plump buds fully exposed to the solar rays during this period? But the flavour of our winter Pears also appears to me equally advanced; and now is the season for those who are inclined to raise seedlings to secure first-rate specimens.

Our *Marie Louise* have been magnificent indeed; perhaps, in part owing to our having had but half a crop this summer; the trees having borne very considerable crops for some years. We had some which weighed as much as thirteen ounces, which I consider a noble *Marie Louise*. The texture of these Pears has been like butter itself.

I have before informed our readers, that I have a *Glout Moreau* on a Quince stock, which I planted about twenty-two years since, as an experiment as to soil; and that I had endeavoured to imitate what is termed, by scientific men, an alluvium, or water-deposit of various finely divided matters. Of this tree, I confess myself rather proud; it is a noble tree, some twenty feet in height, and the bole about thirty feet in circumference. It has borne, this season, nearly six pecks of fruit, which are very good-looking; and as to flavour and texture, why, I believe they will, in the middle of December, almost excel the *Winter Neils*. If this be not a triumph, in its way—what is? Only to fancy, that at the period when this tree was planted, half-a-dozen acres had been established on the same principle! Hundreds of bushels might have been long since sent annually to Covent Garden, for this tree has never missed a respectable crop; and now, as to buds and a prospect for a future year, I think I never saw such a picture.

I am glad to observe that the *Doyenné d'Hiver Nouveau* is a good-flavoured Pear; it, however, comes in too soon to merit the character of a true winter Pear.

Winter Neils is, as it always was, first-rate; the standard of excellence.

Easter Beurré has always ripened somewhat prematurely here. This season, however, I gathered them earlier, by at least a fortnight; and they are now, I am glad to say (December 5th), quite hard, and as fresh as though just gathered.

Althorpe Grassane, too; we had one which weighed twelve ounces. These have been exceedingly juicy and melting. No Pear that I am acquainted with requires so little mastication, providing you carefully pare it; the rind is rather thick and leathery.

Thompson's has been delightfully juicy; it has much of the bonied flavour of *Passe Colmar* and *Fondante d'Automne*. *Beurré Diel* is yet quite firm; and the *Glout Moreau*, from walls, strange to say, are still quite firm; although those alluded to previously from the standard are melting. This it is which has long determined me to consider the tender-Pear-question more a

question of light than any particular temperature; and I fear it is too often forgotten, or thought trifling, that a standard-tree, well managed, gets more light in the aggregate than a pet on a south-wall; albeit, the latter, at times, enjoys greater intensity of both light and heat.

A free circulation of air, too, when combined with a proper amount of solar heat,—why not an important consideration?

I have here been tempted to wander from the general character of the past summer, by that all-important fruit, the Pear; about which, perhaps, more pages have been printed than about any other fruit. Really, the paper-makers are highly indebted to this much-esteemed fruit, not only as an after-dinner affair, but also as one connected with the pocket.

To return to the general effects of the past summer, let us talk of the Peach. Of course, I cannot affirm how it is, in general, with this much-esteemed fruit; but the trees here are just as I wish them to be; the future blossom-buds so protuberant already, that it might be the middle of February. No fruit shows the effects of a really fine summer, or proper culture, more than the Peach and Nectarine. Unquestionably, the two great matters of complaint to which we may trace most of the failures are, first, unripened wood; and, secondly, a premature blossoming, as regards the weather in Britain, through what our physiologists would call the excitability of the Peach and Nectarine. That the first evil may be overcome with certainty, in any summer, I have long since proved; and for the second, or too early blooming, the only thing we can do is to retard the blossoming, and this may be done by a fortnight, at least.

The past summer has been a singularly infelicitous one, however, as to blights; I never knew its equal. Of course, warm and sunny weather is exceedingly favourable to the spread of many of our insect tribes, and above all, a quiet state of atmosphere. I have even known the Aphis family to make most way in our kitchen or fruit-gardens where well sheltered from winds; and the past summer has, in these parts, been more conspicuous for the utter absence of storms than for its heat alone. There is no question, but that winds are most important agents for good or evil in gardening affairs: it little avails to have much sunshine, if brisk winds prevail; the heat cannot accumulate. I speak here, of course, with regard to our more tender fruits and vegetables. On the whole, however, the fruit-grower of 1855 will commence operations with cheering prospects.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—DECEMBER 5TH.

I WENT to see the fruit in Covent Garden Market, before the Meeting in Regent Street, that I might see the difference, if any, between exhibition-fruit and that offered on sale in the public market. Apples, Pears, and Grapes, were not numerous in kinds; and very few of them were fit for desserting. The Pine-Apples were the best fruit in the market; they asked from 5s. to 7s. 6d. per lb for the best *Queens*, and about the same for *Black Hamboroughs* and *Muscats*. *Beurré Diel* and *Chaumontels* were the only good Pears that I could see. The price of *Beurré Diels* was enormous—as much as threepence and fourpence each. There were hosts of large, green *Catillae* Pears, for stewing; but I did not ask the price of them, nor of the pretty French *Lady* Apples; but 3s. a dozen was marked on several lots of second-rate *Newton* Pippins—I suppose from America, or somewhere far off, and they suffered in looks from the carriage and packing. Beautiful-looking Spanish Chesnuts, in every other stall, and marked 1s. 6d. per hundred. Best Spanish Onions, 3d. each. Good

Oranges, 1d. each; and tolerable ones 6d. a dozen; they were very abundant. 3s. 6d. to 5s. a bushel for very good-looking Potatoes. Small, dirty-looking *Nonpareil* Apples, 4d. a dozen; for similar *Ribstone* Pippins, 1s. for fifteen; and very dirty, dingy *Chaumontel* Pears, third size, 1s. a dozen. I never saw finer Carrots, Parsnips, and Turnips. There was some very good Sea-Kale; but no Asparagus or Rhubarb, by the time I got there (about ten in the forenoon). Very fine Mushrooms; some fine Tomatoes, but dear; common vegetables enough to frighten one; the finest Parsley in the world, and enough of it to serve the army in the Crimea for two months.

PLANTS.—There were but few pot-plants in the market to-day. Large and small kinds of *Chrysanthemums* at from 9d. to 1s. 6d., according to the size; double and single *Chinese Primroses*; three or four kinds of Heaths; abundance of *Mignonette*, *Hediotropes*, *Early Van Thol* Tulips, and a few *Cinerarias*.

CUT FLOWERS.—There were a great variety of cut flowers, and abundance of nosegays. The principal cut flowers were Camellias, Chinese Azaleas, double Violets, *Tropæolum Triomphe de Gand*, white and yellow large *Chrysanthemums*, New Zealand Veronias, Scarlet Geraniums, and lots of the *Gauntlet* Geranium from forced plants. My flower-girl is married, but her sister was there, and told me that the *Gauntlet* will not come "of itself" so late as this; nor the Chinese Primrose fast enough, without a little warmth, particularly the double ones. Great quantities of Rose-buds, all of one sort, the common China; and there was no other Rose in the market. A few bunches of *Bignonia venusta*, badly coloured; quite pale, instead of a rich, deep orange colour; *Euphorbia Jacquiniflora*, *Crinum capense*, and *Hippeastrum sulcatum*, *Poinsettia pulcherrima*, *Cactus truncatus*, *Passiflora racemosa*, *Pentas carnea*, and *Euphrasies*.

NOSEGAYS.—With one exception, the make of the nosegays was "huddley-muddley:" good flowers thrown away, in fact; or rather, thrown together bunchified, but cheap enough, in all conscience. Large bunches, ten inches across, of excellent flowers, for one shilling. The only exception was the six-quartered nosegay, nine or ten inches across the bottom, and raised in the middle four inches above the base line. There were only three kinds of flowers in this nosegay, but it looked far better than the rest, because the make was perfect, and the colours in contrast—blue and white. The centre was a large white *Camellia*; then six white spreading ribs, like the ribs of an umbrella, of double white China Primrose; and the quarters between the ribs all of double blue Violets.

I am tempted to give a design for one of the cheapest and prettiest nosegays, which one could make in November, on this quartered system, and all out of five kinds of *Pomponé Chrysanthemums*. Such a nosegay might be made so as to last full three weeks, in a cool room. For the centre, in place of a white *Camellia*, take four flowers of *Argentum*, a pure white *Chrysanthemum*, or four of *Cedo Nulli*, a bluish-white; let there be only one flower on a stalk, or stem, so as to get the four blooms perfectly even on the top; the four stems should be six inches long, so as to form the handle of the nosegay; the six ribs to be of single blooms, one after the other, and all of *Daphne*, the darkest purple in *Pompones*; and the six divisions between the ribs to be in opposite pairs; two of *Surprise*—the best lilacy-blush; two of *Poulidetto*—the best pinky, or rosy-pink, with a light lilac eye; and the last two of *Madame Ronsselon*, the nearest to peach-blossom, before it is too old. I would never allow yellow, or any shade of buff, in a *Pomponé* bouquet, with white, bluish, and lilac; but yellows do well with *Daphne*, *Aramis*, *President*, and *Lais*—all purple of different shades. *President* is dark

purple, at first, but turns to a deep lilac before it dies. I have known a large collection of cut flowers of *Pompones* to live in wet sand, in a front hall, for five weeks, this autumn.

POULTRY.—Mr. Stevens's great Sale-room is not a stone's throw from Covent Garden Market, and although it is not lawful to say anything about killing two birds with one stone, when one gets among poultry, I always call in to see and *hear* what is going on. They were arranging the lots when I called; but I could not wait to hear the prices this time. The light *Bramah Pootra* hens were magnificent-looking birds, and the buff *Shanghies* were finer in colour, and much heavier, than last winter. The birds, altogether, were superior this season; there was not a bad lot in the room. Now that I have plenty of buffs at home, my next fancy would be Black and Brown *Bantams*, the prettiest birds you ever saw. If ever I commit myself in London, it will be by running off with a pair of these, when they are all in a bustle. The worst of it is, that these little fellows crow as loud as *Menschikoff* himself, and there is no way of getting them to hold their tongues when they get to London.

FRUITS.—The greatest novelty we had in the way of fruit, at the Horticultural Society, in Regent Street, was a large dish of eight or nine *Citrons*, every one of which would make a separate *wet dish* in a royal dessert, for the Christmas dinner; I have used them so, preserved in syrup, for many years. The first dish of preserved Citrons I ever saw, was in the dessert of the Caledonian Horticultural Society, in Edinburgh, in the autumn of 1828. It was exhibited by one of the members, but no one tasted it. The last time I saw the same kind of dish was in 1851, when Prince Albert was at Shrubland Park. It made the thirty-second dish in the dessert. It was not tasted then; and I never knew a preserved Citron tasted "at table" in all my experience, and yet a first-rate dessert cannot be complete in the absence of this, the *royal*, among wet dishes. Some dish the Citron whole; others prefer it in quarters. I like it best in quarters, the round or outside to be downwards; the sharp edges at top, and the four small ends just meeting in the middle of the dish, and sufficient of the clear syrup to cover one-half the depth of the quarters in the dish. A *Duchess d'Angoulême* Pear cut into four quarters, lengthwise, gives a good idea of the Citron dish. I have tasted preserved Citrons, by French, English, and Scotch confectioners; but I would not give one good preserved Fig for a pound of Citron; but the fault lay between the gardeners and confectioners; they never found out the right time to preserve this fruit. Mr. Fleming sent those Citrons to the Society, half-way between green and yellow, or, say, a month before they were quite ripe, with a note to say that they had found out, at Trentham, that this is the right degree of ripeness for preserving that fruit. The sharpness of the juice at that stage fights against the sweetness, so to speak, of the sugar and syrup, and, between the two, a very nice taste is imported to the Citron; one of the greatest novelties in the dessert, in my time.

PEARS.—"Time was," began the lecturer, "when Jersey Pears were considered so far beyond the possibility of British gardeners to compete against, that none of them made the attempt; but now the rule is reversed, and Jersey Pears are as far inferior to our English production of the present day, as they formerly exceeded us;" or something to that effect, pointing to a hundred kinds of Pears, on the table, from Mr. Langelier, of Jersey, the best of which were not up to a third-rate condition, as compared with the Pears of Queen Victoria. Verily, the "grant" of £30,000 for the Frogmore Garden is yielding usurious interest.

"Our noble Queen" was first, and deservedly, with splendid specimens of seven kinds of Pears, all just fit "to

set before a Queen." Four kinds were on the near side of the long tray, and three kinds in a row on the opposite side, and there were three Pears of each kind. I do not happen to know how her Majesty prefers the arrangement of the dessert; but I know very well, that some who have sat at the royal table would tell at one glance if one of those twenty-one Pears were out of place,—even to tell best at an exhibition. The arrangement of fruit is as much criticised in the higher circles as the arrangement of the colours in flowers. This is how Mr. Ingram, the director of the Royal Gardens, placed his Pears, to-day, beginning from the right-hand side:—*Winter Nellis*, larger than usually seen; *Chaumontel*, with the sunny-side highly-coloured; *Beurré Diel*, extraordinarily fine-looking; and *Passe Colmar*, good, but not over particular. Now, if you know these four Pears, see how dexterously they lie on the dish to make the best of themselves, and the best group for a painter. See, also, how the three kinds on the opposite side balance the four kinds next to us; they were *Easter Beurré*, *Vicar of Wingfield*, and *Glout Moreau*. Everybody knows the first and third, but the *Vicar* is a newer kind—very long, with a small, long neck. The rest of the gardeners place their Pears "as they come."

Mr. Snow, gardener to Earl de Grey, and Mr. Tilliard, gardener to the Right Honourable the Speaker, came in neck-and-neck for the second-best prize. I wondered how the judges would decide between these two, till the awards were announced. I was so long in that court, that I shall never get rid of the ruling passion about ticklish decisions of judges; they were both best, and had the same prize; and so they were. Mr. Snow had three *Easter Beurré*, greenish; two *Uredale's St. Germain*; six *Beurré Diel*, quite ripe; one *Susette de Baray*, like a large, round Apple; six *Passe Colmar*, just fit for table; six *Glout Moreau*, very good size, but two of them only fit for table; four *Chaumontel*, in fine colour; six *Winter Nellis*, in their prime, and medium-sized; three *Napoleon*; and four *Old Crassane*.

Mr. Tilliard had three *Ne Plus Meuris* (say, No Plu Mure), the Rhinoceros among Pears—an ugly shape, or, rather, no shape—a very ugly skin, but a most delicious, buttery Pear, which lasts to the end of January. I have dished it in March, but it is one of the tumble-downs-off-a-dish. Three *Winter Nellis*, very good, and above the middle-size of the kind; three *Calabasse*, large, long, and brown; three *Passe Colmar*; three *Beurré Diel*, very large and fine, as large, indeed, as *Duchesse d'Angoulême*; three *Beurré Rance*, the best of the latest keepers; three *Forcille*, quite darlings, for colour, and quite unusual so late in the season,—everybody ought to have one tree of the *Trout* or *Forelle* Pear; three *Knight's Monarch*, a famous, middle-sized, roundish Pear—very hardy tree, and bears well—it seems as if a seedling cross from *Crassane*; three *Glout Moreau*, one of them the largest of the kind I ever saw. This Pear stood the spring-frost about here better than any other.

Mr. Mc Ewen, gardener to the Duke of Norfolk, at Arundel Castle, sent a fine collection of best Pears, and another of the finest dessert Apples, for which prizes were given; among Apples was the *White Colville* of the French, but lacking the usual marble flush from the sunny south. The *Court Pendu Plat* Apple, or "Poor Man's Profit," as they say about Ledbury; or the *Garnon*, as they call it round Hereford, was very fine. I always considered this Apple as the very best and most useful we have in England. I often noticed, that if I let the cooks have it in November, no other would go down with them till the very end of the following May, but "that yellow-pulpy sort." This, with the *Old Nonpareil* and the *Old Golden Pippin*, were the only Apples which I was allowed to dish for the dessert all the time I was in Herefordshire.

There was a collection of Pears, in good condition, from J. Abell, Esq., of Limerick, chiefly to show the difference between the same kinds on the free and quince stocks.

PINE-APPLES.—Mr. Fleming sent a fine *Prickly Cayenne*, weighing 5 lbs. 4 oz., with a very small crown; and three *Montserrat*s, 4 lbs. 4 oz.; another to match; and the third weighed 3 lbs. 13 oz.; the three had large crowns.

Mr. Brown, gardener to J. Parnell, Esq., of Waltham Abbey, Essex, sent a *Queen*, 3 lbs. 10 oz., with a very small crown; and Mr. Jones, gardener to Lady Charlotta Guest, Dowlais, sent a *Ripley Queen*, weighing 4 lbs., with a moderate crown; a fine looking specimen, which would keep longer, and was hardly ripe enough for table; and a very fine looking *Cayenne Pine*, 5 lbs. 7 oz., was sent from Arundel Castle, by Mr. McEwen, who came out on this occasion quite pomologically. Mr. McEwen was the first gardener who proposed, and "did," pyramid Geraniums; and I bought a pound of pic-nic biscuits to crack with him, and learn more about them from him, at the last July Show at the Regent's Park, but I missed him.

GRAPES.—There was one bunch from Mr. Snow, and if it had been suspended from the roof, I venture my head that not three members out of all the Pomological could tell the kind; and I am not quite sure, if he had given it another name, that one of the Horticultural would hit nearer the mark. It was not eighteen inches long, but not far from it, very "loose set," wide across the shoulders, noble looking, good berry and colour, and full 4 lbs. in weight. The shape put you in mind of the *White Nice*, but it was a *Barbarossa*, and the best of that kind hitherto "brought out" in this country. Mr. Snow put some of us old ones to the blush, also, with a dish of old *Golden Pippins*, so large, so smooth, and so yellow inside, that we could not gainsay the purity of the kind. Mr. Nash, of Bishop Stortford, sent two large baskets full of his far-famed Grapes, a *Black Hamborough* and a *Muscat of Alexandria*. They were splendid, but the *Muscats* were not so ripe as they are usually liked for table. The *Muscat* is not fit for the Queen till it is of an amber colour all round, and the sunny side is tinted brown, or reddish-brown. Great age and free ventilation only will go to this stage, in a temperature fit for the *Hamborough*; but 75° as the lowest day temperature, and 60° for the night, from the full size of the berry, will soon bring the *Muscat* to amber and tint. A direct contrast to the *Muscat* was in four ripe bunches of the *White Syrian Grape*, from Mr. South, gardener to A. H. Davenport, Esq., of Capethorn Hall, Cheshire. All the heat in coals will not ripen this *Syrian*, nor the *Nice*, nor the *Tokay*, nor the *Salamana*, without age; that is, none of them can ever be forced to ripen like the *Muscat*; they must all of them have time—that is, to hang six weeks or two months after one would take them to be ripe enough without tasting them. These *Syrians* were done justice to, and now they are next kin to the *Muscat*. When they are cut, and swallowed in the usual way, people complain of them being too hard, and without delicate flavour; but that is certainly not the fault of one of them. The *Salamana* is the best of the four, and the least known.

Mr. Hill, gardener to R. Sned, Esq., of Keele Hall, Staffordshire, and next-door neighbour to Mr. Fleming, has got into the Flemingtonian way of growing and packing Grapes. He sent three bunches of fine *Muscats*, and three of *Black Hamboroughs*, lying "heads and tails," in one box; and they were much praised. Every gardener, who sends fruit for exhibition, ought to be allowed to see exhibition fruit unpacked at the shows, in order to see the best methods of packing. There were Pears and Grapes completely spoiled for exhibition at this meeting, and at almost all the meetings; but I

shall not mention names; the fault lies with the employers: My first master was too good a judge to believe I knew everything as well as I ought; and he sent me to London, and all over the country, to learn; and told me to put down the expenses in the garden accounts; and now there are hundreds of things which I know little about, but which every gardener ought to know. In the army, there are sets of men brought out on purpose to do the things; but in the garden, a pair of hands and one head is expected to know and do every thing, from the field-marshal to the last drummer; but the thing is simply impossible.

STRAW MATS.—Mr. Brewer, from the Pine-Apple Place Nursery, sent a straw mat; and a very nice model of a frame for making them, easier than on the ground, or on a wide table, as we used to do them. The frame is just like a clothes-horse, breast high. There are two upright splains of half-inch deal, fixed against the horse, near each side. These have holes four or six inches apart. Then there are two splains, with two wooden teeth to each; and these fit the holes, leaving a two-inch space, between the horse and the moveable pieces. Now, in weaving a mat four feet wide, you want five rans of tarred twine, at equal distances. The straw is let in from the top of the horse, in thicknesses of an inch or so; two strings across each little bundle, at so many places; and when the first part is done, draw out the two pieces with the teeth, let down what there is of the mat, and put in the teeth again, and between the ribs of the mat; and so on to the end.

D. BEATON.

MANDEVILLA SUAVEOLENS NOT FLOWERING.

"I have a *Mandevilla Suaveolens*, which has been planted against the wall, at the back of my greenhouse, upwards of a year-and-a-half. It has not flowered; though this last summer it has grown luxuriantly, and quite unchecked, to the top of the house. Can you tell me whether it requires any particular management? and, if so, what? It has never been cut at all."

Your plant is not strong enough to bloom, I expect. Unless your house is very light, and there is no impediment to the full force of the sun's rays, you will get no blooms to speak of against your back-wall. If there is plenty of light, and you prune your plant pretty well in, you may expect some blooms on the current shoots of the following summer. To get plenty of bloom, however, the plant must be got near the light, so as to secure the thorough ripening of the wood. I would advise you, therefore, to grow your plant in loam and peat, the latter being within a few inches of the ball, as, after that, good, fibry, well-drained loam will be best. If not very luxuriant next summer, soak the roots with manure-water frequently, provided your drainage is good. You will likely have a number of shoots on the back-wall, and before free-growth commences in spring, go along and prune off every offset, so as to secure one stem, just as if you were going to make a standard Rose of it. If your shoot of this last summer is a foot or two above the back of the house, cut off all these offsets clean, so as just to leave one stem; but if your shoot merely reaches as far as the glass, then, lest you should check the roots too much at once, it would be advisable to allow a few buds to remain along the stem at the back-wall, just to act as stimulants to vital energy—until the main point shoot was growing freely, when all buds beneath the top of the wall should be removed. If you had half-a-dozen buds well-ripened, near the glass, and left these, it is probable you would from them have shoots and flowers next summer. If these buds are not sufficiently

ripened, you will have no flowers; and, whether or not, your great end, in that respect, should be to get one good, strong shoot, or even two, trained along, about fifteen inches from the glass, and exposed to every possible ray of sunshine. From such a shoot, cut back a third, or half of its length, so as to leave the best-ripened part, you may expect the buds to break, and yield you—just as in a Vine-shoot—young shoots and flowers in 1856.

For some years, I had a plant against an iron pillar, the head of the plant having pretty much its own way over part of a lofty span-roofed house. An armful of flowers might have been cut any time during the summer, whilst the plant was in bloom. There was no particular mode of pruning in the autumn, unless the old mixed system of Vine pruning might have been taken as a type, namely, cutting back weak shoots to one bud; stronger ones to two or three buds; and, stronger still, well-ripened pieces, and where there was room, to six, seven, or eight buds; and no plan, in the circumstances, could answer better for the production of bloom. But for two years, and especially the last, the twining stem must needs try to elasp and crush the iron column; and though it holds as firmly on as ever did a famed bull-dog stick to its prey, signs are already apparent, that whatever the result to the iron, the *Mandevilla* will lose its life eventually in the contest. For a large, lofty span-roofed house, where it is difficult to get at the plant, to nip and tie it, that mixed system of pruning, and the careless mode of training, will answer very well. But for small houses, where neatness, economy of space, and as much bloom as is possible in a small space, are the requisites; then, I think, I can tell of a more excellent way, or get a friend and neighbour to correct misstatements for me.

I have several times been requested to give a slight sketch of Stockwood Park, near Luton, and the improvements there; and I have chiefly been deterred, by the insinuation of some friends, that I am apt to have a magnifying glass for all beauties at no great distance from home. Well, so far as I am concerned, I would rather come home humbled, than *vanity blown*. The great London used to say, that when a gardener went from home a day or two, his own things were apt to make him stare with astonishment when he came back. He could see blemishes and imperfections then, at a glance, which he never noticed when passing them day by day. Be this as it may, during the last summer especially, though the plant has been very good before, there was a stem of *Mandevilla*, a perfect floral wreath, with just enough of green to relieve the dense bunches of white, sweet flowers—that wreath being about fifteen inches in diameter; and, as far as I can recollect, from thirty to forty feet in length. Such a sight would reward the toil of any young gardener who tramped twenty miles before breakfast to see it. Mr. Busby's treatment of it seems very simple; and when I mention the main features, others, some time hence, may equal, if not excel, the beauty of the plant under his management. In a range of span-roofed houses, some six feet high at the sides, and fully half of that being glass, height to the ridge ten feet, and width fourteen feet, or so; there is a shelf all round, a good broad path all round, and a flat, trellissed table in the centre, with a glass division: making one-half a stove and Orchid house, and the other a greenhouse. In the centre of the greenhouse part, but close to the division separating it from the stove, this *Mandevilla* is planted, and trained to a wire, which runs just inside the pathway, along the house longitudinally, about seven-and-a-half feet from the floor, and a foot from the glass. The plant is progressing so in length every year that it seems quite capable of going round the house. Every winter it is pruned pretty closely in, much as you would spur-prune

a Vine, only—the wood and spurs being small—the spurs are left standing rather thick. If all goes well, I feel sure that this plant will be even finer next year; and I am sure that Mr. Busby will have pleasure in showing a really fine plant, splendidly managed to suit the place it is in.

PASSIFLORA COLVILLII NOT FLOWERING.

"I have a plant of the above that is very rampant; I have kept stopping and stopping it, but it has not flowered any."

The stopping was very likely wrong. Prune back now within a few buds of well-ripened shoots, if of a medium strength. If the shoots should be as strong as a goosequill, leave half-a-dozen buds, if there is room for the shoots to come from them. Every well-ripened bud of this summer's growth will furnish a flowering shoot for next summer; but you must not stop them unless you wish for successions of flowers. See an article on suspending and festooning creepers lately. Example is often more illustrative than precept. That article on festooning, &c., was written some weeks before I last saw the *Mandevilla* at Stockwood. In the same house there was a whitish-green Passion-flower, that would have amply served me for an illustration. On one side was the huge bottle-brush-like wreath of the *Mandevilla*; on the opposite side was this Passion-flower, also running longitudinally on a wire along the house. On the flat trellissed table, beneath the *Mandevilla*, were set some showy plants, because there was plenty of room beneath it. On the other side, there were few or no plants on the platform, and if there had been, they could not have been seen, for the summer shoots hung densely down from the longitudinal wire to which the main stem was fixed, reaching almost to the floor, and presenting a mass of bloom, in which flowers seemed to predominate over leaves. All that would be required, to obtain a similar effect next year, would just be to prune back these shoots to a spur, with one or two buds, as soon as you wished for more light to the plants on the centre platform in the autumn. No training, tying, twisting, could ever have produced such a splendid effect as that line of flowering-shoots hanging and dangling at their ease. Give the present year's wood plenty of sun, harden it well, cut it back to a spur, on old plants, where there are many shoots, or to a long well-ripened shoot, where you have only one; just as you would do in the case of a Vine-shoot; and from every fully-ripened bud left on spur or shoot, you will have a shoot loaded with bloom, and the best training is just to let it dangle and train itself.

NERIUM OLEANDER ALBUM NOT FLOWERING.

"I have a nice plant of this, quite a bush, but it did not flower this season, and so I cut it down in August; and I want to know, if I shall be rewarded for my patient tending it over the winter, with plenty of flowers next summer?"

I wish I could honestly say, Yes; but you must exercise patience a *little* longer. If you have nothing but young shoots formed since August, and have little but a greenhouse to help you, then, I fear, you must wait till the summer of 1856. The treatment of the plant has been frequently given. The well-grown and well-ripened shoots of one year are those which should bloom at these points in the next. After pruning before growing there must be no farther stopping of shoots until they bloom. Proceed thus: keep the plants from frost during the winter; give them no more water than will just keep them healthy and slowly-growing; as the spring comes round, give them a good place, and fresh soil as they require it, and as much water as they can comfortably absorb, placing them as much in the sun as possible. After July, you

may place this white plant out-of-doors, in a warm, sunny position, and give water in proportion; by the middle of September, place it against a wall or fence exposed to the south, the *pot*, not the *plant*, being defended from the sun; here gradually curtail water, giving none except to keep the leaves from flagging; house in October; and keep dry all winter, so as not to be parched, nor greatly hurt the leaves. As the days lengthen in spring, give water, and as the heat increases the flower-buds will show. At the base of the flower-stalk you will probably see three young shoots coming, nip them out, and your truss of flowers will be larger and more symmetrical.

R. FISH.

SARRACENIA PURPUREA.

THE PURPLE SIDE-SADDLE FLOWER.

THE meaning of this generic name often puzzled me. I could not help thinking it had something to do with Saracen; for the flowers have a turban-like, bloody appearance, such as, in infancy, the tales of the bloody Saracens led me to believe these cruel men appeared. Perhaps some of my readers may have the same idea also; and to remove that, let me inform them, that the name is given to immortalise a very amiable, humane physician, Dr. Sarracen, a Frenchman. The English name, "Side-saddle flower," is given to it, because the flat cover on the top of the flower has a fancied resemblance to that part of a horse's furniture. These plants are natives of North America, and have been grown in this country for more than two hundred years, and yet I dare venture to say, that there are many readers of THE COTTAGE GARDENER that have not seen them. They are, however, exceedingly curious, and, when well grown, equally handsome. There are several species, though I think the one I have selected is the handsomest, and, perhaps, more easy to grow than any other. They have, when young, common, plain leaves; but as they grow older, the fresh leaves are formed into pitchers. The *S. purpurea* has pitchers about six inches high, standing upright, and an inch or two in diameter at the mouth. These pitchers are not like those on the true Pitcher plant, hung on the end of the leaf, but are produced direct from the base of the plant. One, *S. Drummondii*, has long-necked pitchers, sometimes two feet high.

The finest specimen of *S. purpurea* I ever met with, I saw, several years ago, in the large conservatory at Chatsworth. The roof, and, indeed, what may be called the sides of that magnificent building, are, as is well known, formed in ridges and furrows; consequently, inside, at the bottom, they form triangles. In one of these the *Sarracenia*s were placed, set in shallow garden pans kept full of water. The abundance of light, in such a situation, gave the plants the finest colours, and the water kept up a moisture always suitable for these plants. It is not, however, necessary to have a Crystal Palace to grow this plant to perfection; it may be grown equally well in a more humble dwelling.

CULTURE.—*Sarracenia purpurea* is an evergreen, herbaceous perennial, found wild, in marshy ground, in the western hemisphere, where the summers are much hotter than we have them here. These two facts give us the idea what we must do to cultivate it successfully. First procure a good plant, which will cost about five shillings, then obtain some rough fibrous peat, and some white bog-moss. Break up the peat into small pieces, and chop the moss with a bill-hook, or small hatchet, then mix them together, and add a little half-decayed leaf-mould. Early in spring repot the plant, draining the pot well previously. Press the compost firmly about the plant. The pot, for such a plant as will be got from the nursery, should be six inches diameter,

and of a shallower shape than is usually made. Place the pot nearly close to the glass, shading it for a few days till it begins to grow, when it will bear the full light of the sun. The best house for it will be a moderate stove, though it will thrive very well in a good greenhouse, providing it is sheltered from a thorough draught of cold air. Nurserymen, in order to grow small plants into large ones, place them in an Orchid-house; but the plants in such a high temperature never have such fine-coloured leaves and flowers as in a cooler house with plenty of light. Some cultivators place a bell-glass or a hand-light over their *Sarracenia*s; but this is a coddling, unnecessary practice.

SUMMER MANAGEMENT.—As these plants are curious and beautiful objects, even when not in flower, they should be always kept in such a situation where they can be seen every day. Hence, they should be kept in the greenhouse all through the summer; the platform and walk where they stand should be syringed frequently, every day, to keep up a moist atmosphere. Set them in pans, in moss kept moist. I have, indeed, put the pot containing the plant into another larger one filled with moss, which kept the pot and soil from the heat of the sun, and the plant grew all the better for it.

WINTER TREATMENT.—When the weather becomes cooler, the plant should be kept a degree drier; but not too much so. I have seen plants, deprived of moisture in winter, lose all their fine pitchers, and even die for want of moisture; therefore, keep them all the year moderately moist. Some cultivators place them in cold frames, or pits, through winter. Here the cold, and want of light, causes them to mould and damp off. Avoid this extreme of cold, by all means; but at the same time, do not excite them into premature growth by too much heat. Summer temperature, 65° to 70°; winter, 55° to 60°.

PROPAGATION.—Though I have seen quantities of plants, evidently seedlings, imported from America, yet I never saw seed perfected in this country; hence, whoever wishes to increase his plant must do so by division. The plant, when of a tolerable size, sends forth offsets, and these soon put forth roots of their own. With a sharp knife cut off one or more of these offsets, and leave them in the mother pot for a month, or so, till fresh roots are made; then turn the ball carefully out of the pot, and carefully separate the offsets, disturbing the ball as little as possible. This is far the easiest mode to get out the young plant from the old one. Pot it, or them, in pots proportioned to the size of the young plant, and place it in a shady, warm nook for a week or two, when it may be treated as described above for the established old plants.

T. APPLEBY.

HARDY FERNS.

ADIANTUM PEDATUM.

Adiantum contains many beautiful species, but this is the only species that is decidedly hardy. Sir Oswald Mosely, at Rolleston Hall, near Derby, has a very fine collection of hardy Ferns, planted in a rather open part of a plantation, on a raised bank, and there this *Adiantum* has lived for several years, protected by a slight covering of decaying leaves. The last time I was there, I saw it producing fronds eighteen inches high, and with fronds spreading nearly a foot across. Let any one possessing a plant try a similar situation, and they will find it thrive equally well. The *Adiantum capillus veneris*, though a native of Britain, is not so hardy.

ALLOSORUS.

A genus of Ferns containing a solitary species. The name means *allos*, various, and *sorus*, a heap; the sori,

or seed-vessels, presenting varied appearances as they develop themselves.

A. CRISPUS (Curled).—This pretty Fern is found plentifully on the blue slate rocky hills of Wales and Cumberland. It has two kinds of fronds, one barren and the other seed-bearing, or fertile. Barren fronds twice divided, or bipinnate; pinnæ often divided again, and twice-cut at the edges, giving the plant a parsley-like appearance. From this circumstance, collectors often call it the Parsley Fern. Fertile fronds are also bipinnate, and even tripinnate at the lower part of the frond; leaves contracted on one side. The plant is very dwarf, seldom reaching six inches high. It forms a pretty, neat, evergreen patch, and should always be planted amongst small stones, considerably elevated. Increased readily by dividing the creeping rhizoma.

ASPLENIUM.

ASPLENIUM MARINUM (Sea-Fern).—So named, because it is found in the clefts of rocks on the sea-shores of Britain. I described this as a greenhouse Fern; but where the cultivator resides near the sea it may be cultivated in the open-air.

A. ADIANTUM NIGRUM (Black-Adiantum).—A neat, dwarf Fern, native of Britain. I found it, very lately, growing plentifully on a hedge-bank, in the parish of Chalfont, Bucks; the first time I ever saw it wild. Fronds triangular-formed, and variously divided; when the fronds are in fructification the seed-vessels (nearly black) cover the under sides of the pinnæ. Very hardy, but requires a dry situation, rather shaded. Increased readily by off-sets that form themselves round the tufted rhizoma.

A. ALTERNIFOLIUM (Alternate-leaved).—An elegant little Fern, found on the Scottish mountains, and also in Germany, France, Sweden, and Switzerland. Fronds pinnated alternately, growing only three or four inches high, in a compact patch; pinnæ lance-shaped. Increased by division.

A. FELIX FEMINA (Female-Fern).—So named because of its lady-like appearance. There is no Fern that surpasses this in its elegant, feathery habit. Native of Britain, growing on hedge-banks in shady lanes; it is also found in every quarter of the globe. Fronds two feet high, bipinnate, broad lance-shaped, and of a beautiful light green; pinnæ narrow, and thickly-placed on the stem—the lowest one the largest in size; stems scaly; seed-vessels kidney-shaped. Increased slowly, by division.

There are several permanent varieties of this beautiful Fern. One is particularly handsome, and has been named *Multifidum* (many-times-cut); that is, the leaves at the end of the fronds are finely divided, or tasselled. This was discovered in Ireland, by Mr. D. Moore, of the Glasnevin Gardens.

Another variety is sometimes named *Crispum*, and also *Smithii*. It was also found in Ireland, by Mr. Andrew Smith, gardener at the Holme, in the Regent's Park, a very successful cultivator of hardy Ferns, even in that locality.

A third variety has been named *ramosum*; the leaves branching out, flat-shaped, not particularly handsome; but very curious. Found in Ireland, by Dr. Mackay; the intelligent curator of the Trinity College Gardens, Dublin.

A. FONTANUM (Fountain).—A British Fern, of a neat, dwarf, compact habit. Fronds long and narrow, lance-shaped, and twice-cut, growing six inches long. I have had plants of this pretty Fern nearly a foot across. Should be grown in moist, shady places. Increased readily by division when the plant is large enough. This is really a desirable Fern, and no collection ought to be without it.

A. LANCEOLATUM (Lance-shaped).—Another elegant

British Fern, something like the *A. fontanum*, but the pinnæ are placed much more distant from each other, and the fronds grow taller, often attaining a foot in length, and the leaves are more deeply notched, or toothed. Decidedly a rock Fern. Increased by division.

A. MICHAUXIA (Michaux's).—A North American Fern; but perfectly hardy. It loses its leaves in winter, being what is termed deciduous. It is a tall-growing Fern, reaching two, to two and a half feet high. The whole frond forming a broad, lance-like, shape, and many times divided; pinnæ flat, and widely apart, and deeply cut at the edges. Increases readily by dividing the creeping rhizoma. I may as well just mention here, that all hardy Ferns that will increase by divisions should have that operation performed just before they begin to grow. If divided after the fronds have made some progress, the young fronds are almost sure to perish.

A. RUTA MURARIA (Wall-Rue).—In some parts of England, this pretty Fern clothes old walls with its dark green tufts of fronds. Fronds bipinnate, only a few inches high; pinnæ roundish, something like the leaves of Rue; hence its specific name. To grow this pretty Fern well, mix some old lime amongst the soil, and plant it on the top of a pyramid of small stones, or broken bricks, or place it in the crevices of rock-work. Increases readily by division.

A. SEPTENTRIONALE (Northern).—This very neat Fern formerly grew plentifully in the crevices of the rocks, on the mountain named Arthur's Seat, near Edinburgh; but ruthless collectors have nearly stripped that locality. The last time I was in Scotland, I climbed to the top of that mountain, but could not find a single plant. Fronds bipartite, or twice-parted, three-toothed at the extremity. Seed-vessels long, covering the entire under-surface of the leaves.

This truly elegant little Fern should be planted in pure loam, and placed on the highest point of the rock-work. A plant or two should always be kept in pots, under a cold frame, as it is apt to die for want of its pure native mountain air.

T. APPEBY.

(To be continued.)

FORCED YOUNG POTATOES.

In my last, I described, at some length, the mode by which Potatoes are had, during the winter months, in a condition that resembles new or young ones. I now endeavour to explain the mode in which young ones are in reality obtained, which is, in itself, simple enough; and the season having arrived for commencing operations that way, the subject is appropriate enough; and, as has been before observed, young Potatoes are generally more esteemed than retarded ones. Some attention is required to obtain these early, and there are few people but who will admit they are worthy of the effort.

In the first place, young Potatoes, like other early products, can only be obtained by having recourse to artificial heat in some shape or other. A remarkably early kind of Potato will produce tubers fit for table several days before a late kind will do so, when both are treated alike out-of-doors; but we want them some weeks before the earliest out-door ones come in, and these only can be had by having recourse to artificial heat; the very earliest requiring it to have been long continued; while the second or succeeding crops, intervening between the earliest and the open ground produce, will not need it so much; and a very homely way of covering up will materially assist a portion in coming into use before the open-air crop.

As most people aim at obtaining them as early as possible, it will be best to begin with that first; and, in so doing, I disclaim all idea of introducing anything

absolutely now; but the general principles which govern this, as well as most other things, cannot be too well understood to ensure success.

Like many other things, a sacrifice is made in obtaining the earliest, in proportion to the forcible means adopted; for the same roots which would produce an abundant crop in favourable out-door circumstances, will be found to be much less prolific when urged into action before their accustomed time, and their growth and health maintained solely by artificial means. This is no more than all other garden products are subject to; for the earliest Grapes, Peaches, and other fruits, are all, more or less, obtained at the sacrifice of quantity, or some other cost, incurring a loss proportionate to the forcible means used.

Amongst heating materials, that which conveys a gentle, moist warmth to the roots is of most service; because it is the root part of the vegetable that is of service, and not the top; hence the propriety of having something in the way of the old-fashioned dung bed. I generally plant my first crop on a bed of the driest and best leaves that can be got, and as soon in the autumn as they are available, which, however, is seldom before the end of November; the gentle heat they impart is sufficient at this early season; and as they advance, protection, in the shape of covering, is given as wanted, and, if needs be, linings of hot dung likewise. This latter, is, however, not always to be had; for the demand for it, for other purposes, in mid winter and early spring, often precludes the possibility of having it as an auxiliary to the leaf bed; but this latter maintains its heap pretty well, and in my case, it is generally surrounded by a large heap of store leaves, which maintain a nice, useful warmth a long time. In fact, I often place an old frame on the heap of leaves so collected, and plant the Potatoes in it accordingly; but, in my case, leaves are, perhaps, more plentiful than in every place, that a something else must be used instead.

Those who have sufficient structures of glass, or brickwork, heated in some way or other, by fire, or water, or both, will not be in any difficulty in securing their object, because there is that steady, continued heat to depend on, which other modes cannot always command, and, in times of severe frost, the necessary additional warmth to meet the exigence of the case can easily be had; but as few can spare such a place for Potatoes, it is better to depend on the more humble mode detailed above, or in some other resembling them. For instance, many people, who have not a range of pits heated by fire-heat, have their cold-pits sufficiently deep to admit about three feet of fermenting material, which ought to be of a kind that does not readily lose its heat. I have sometimes found tan very good that way; but somehow, of late years, it does not seem to be so good as formerly, that I have, more than once, been deceived in its not heating at all. Well-tempered dung is better, or a mixture of dung and leaves is, perhaps, better than either alone. At all events, it is advisable to have something that will retain its heat until the middle or end of February, at least; and it is needless to say, that most of brick pits are so constructed, as to prevent heat being applied after the bed is once made. In such beds, it would be better to delay the making up until Christmas, because the "growing period" would then have arrived, in which a decided progress is made; whereas, early in the autumn, there is a considerable time in which little advance takes place; but even this delay might be turned to account, by having the Potatoes brought forward in some other place, and then planted in the bed when it is ready to receive them; and they may be brought forward in some odd corner, without interfering with anything else.

Any dark place will do to start them in that is somewhat warm; and the best way is to pot each Potato in

a separate pot (say a five-inch one), with tolerable good soil; and do not, by any means, allow them to get too long in the top, for that will render their after-transplanting into the prepared bed, a greater trial to them. It would be better to have the pot well filled with roots, than that the top should be long and unwieldy, for the roots will be progressing in the right way towards the object required; whereas, the development of the top will be only so much loss, for the energies of the plant will be drawn that way, to the serious decrease of the more legitimate part. Good, sound Potatoes put in pots, and planted in some place where they may have top-air, will immediately commence growing, if they be of the proper sort, and will continue to do so as long as they are wanted; and they plant into their proper beds very easily, and with a certainty of their doing well there, other things, of course, being favourable likewise. Although the wish is usual to make a bed that so much labour attends produce as much as possible, yet it is doubtful whether planting thick is likely to accomplish that object. Potatoes may be planted closer in a frame than is usual for the crop out-of-doors. This is easily done; but rows any closer than eighteen inches apart cannot benefit anything; and kinds with large spreading tops ought to be wider. Let the earth be good, and for those transplanted from pots, it had better be warmed in the bed ere they be turned out.

It is useless recommending any particular kinds, for every district has its favourite. That which I grow, partakes much of the *Ash-leaved Kidney* in the appearance of tuber, but the foliage is different. It has, however, only a local name; but it is a good variety, and small or cut sets of it germinate more freely than the *Ash-leaved* variety, while it is quite as early; in fact, more so. There are, also, round Potatoes in great numbers, all early in their way; but most people prefer the *Kidney* for appearance.

Let the soil be good that they are planted in, and the situation be an open sunny one, otherwise, the object is defeated, for Potatoes will not grow without that all-important agent the sun; even in the dark days, when he seldom makes his appearance, they seem to miss him much, if their situation is such as prevents his shining on them, and a sickly elongation of top is the result. Covering well up at night will be necessary at all times, and in periods of frosty weather, it may, perhaps, be necessary to have it on for a day or two together; but in a usual way, uncover every day, and also give air on all favourable occasions, for the Potato, though easily affected by the least frost, is, nevertheless, much hardier than the Cucumber, and if daily inured to it will endure almost total exposure with benefit, whenever the external air is above 40°; but, of course, the matter may be carried too far. The happy medium is to prevent an undue development of top, without, at the same time, checking the root. When that is accomplished, success is certain.

J. ROBSON.

NEW PLANTS.

CASSIOPE FASTIGIATA (*Pyramidal-shaped Cassiope*).

This plant has been by some botanists included in the genus *Andromeda*, and in allusion to its likeness to the species which compose that genus, when it was found desirable to rename this plant, it was called *Cassiope*, because this was the name of Andromeda's mother in fabulous history. Dr. Wallich named it *Andromeda cypressiformis*, or Cypress-shaped, which was certainly a very descriptive name. Sir W. Hooker appropriately calls it "a charming plant." It was raised from Himalayan seed by Mr. Moore, of the Glasnevin Botanic Garden, Dublin. The seed was collected by Major Madden in the North Western Himalaya, at a height of from 12,000 to 13,000 feet. Dr. Wallich found

it at Gossan Than, in Nepaul. It flowered in May, at Dublin. It is probably hardy, is a small evergreen decumbent shrub; leaves closely imbricated (lapping over each other like tiles),



and so as to give the branches a four-sided form. The leaves are stalkless, with a deep broad keel, and a silvery finely-haired edge. The flowers are white. It belongs to Decandria Monogynia of Linnaeus, and to the Natural Order of Heathworths (*Ericaceae*).—*Botanical Magazine*, t. 4796.)

RHODODENDRON CITRINUM (*Citron-flowered Rhododendron*).

Messrs. Rollisous, nurserymen, Tooting, received this from Java, whence it was forwarded to them by their collector, Mr. Henshall. It bloomed with them in May of the present year. It was first discovered by M. Hasskarl, who found it at Java at an elevation of 5000 feet, in the marshy mountains of Tjiburrum, growing on old trees. Mr. Henshall found it as high as at 9700 feet above the sea's level. Although included in the Decandria Monogynia of Linnaeus, its stamens are constantly no more than five. It is a small evergreen greenhouse shrub, and the flowers are pale lemon-colour, with bright orange-coloured anthers. The leaves are glossy, and like those of the Camellia. It is a desirable addition.—*Ibid*, t. 4797.)

PRIMULA MOLLIS (*Soft-leaved Bootan Primrose*).

Sir W. Hooker says this is "a charming new *Primula* of the *Primulastrum* section, and intermediate, as it were, between *Primula sinensis* and *P. cortusoides*, but very different from either in foliage, corolla, and especially calyx. It is a native of the mountains of Bootan, where it was discovered by Mr. Booth, and the plants were reared from seeds sent by him to his relative, Mr. Nuttall, of Rainhill, near Prescott. They flowered in the April of the present year. That gentleman has hitherto treated it as a hardy greenhouse plant, but, probably, it will bear the open air, and may be considered as bearing the same treatment as *P. cortusoides*." The leaves all rise from the root, bluntly ended, heart-shaped, with the edge deeply indented, and, like the whole plant, covered with long, spreading hairs. The flowers are deep rose-colour, and in three or four whorls, one above each other on the scape, or flower-stem.—(*Ibid*, t. 4798.)

BIRMINGHAM POULTRY EXHIBITION.

DECEMBER 12th, 13th, 14th, and 15th.

APPREHENSIONS have frequently been expressed, during the past year, that the greatly-reduced prices at which several breeds of poultry have been quoted, and the failure,

in a financial point of view, of numerous provincial exhibitions, were likely to depreciate the character of the Birmingham collection in Bingley Hall. We have never shared in these misgivings; considering, that the very reasons we have alluded to would prove anything but prejudicial to the interest of an association occupying the position that must be accorded to the Society in question. We apprehend, indeed, that the very fact of some descriptions of poultry having receded from an extravagant and unwarranted estimate of value, which did not appear to be sustained by the intrinsic merits of the birds, is positively favourable to the interests of both sellers or buyers, as also to the utility of an exhibition, and the financial prospects of its committee. With reference to the insolvency of those provincial exhibitions, which are reported as not paying their expenses, their unwise multiplication, and, in some instances, their injudicious management, sufficiently account for their mishaps. The "Birmingham and Midland Counties' Society," however, encounters no such perils. The high character of its previous exhibitions, its central position, with the ability with which its officials have employed the large funds at its disposal,—were just grounds for confidence of success, which has been amply realised at the meeting of December, 1854.

The number of pens, it is true, fall somewhat short of those competing in 1853; but this is readily explained by a reference to the rules, which, on the present occasion, required a subscription of £1 Is. from every exhibitor, instead of 10s. 6d., with a limitation to four pens instead of six. But what is lost in mere numbers, is, assuredly, more than atoned for by the necessarily superior character of the specimens; and the zeal of the keenest amateur, in every class, will have been amply gratified by the presence of such birds as best represent the various characteristic excellencies of their several breeds.

A new feature, it should be observed, in the exhibition of the present year, is the introduction of classes for "Single male birds" of most of the different breeds of fowls. The good policy of this measure is unquestionable; for, not merely is the main object to which the attention of all poultry committees should be always directed, namely, the improvement of the respective races, effectively carried out by such a course, but many a good bird is thus enabled to compete, which, otherwise, from the want of fitting companions, must have remained in inglorious retirement. We have no desire to see our poultry exhibitions turned into a mere bazaar; for to this circumstance may fairly be attributed the ill-success of many an ill-directed effort to establish associations of this description. But facilities for the purchase of single male birds cannot be too highly estimated; and many will thus change owners, to the mutual advantage of both parties, where the usual complement of a pen, from the probable near relation of its inmates, would not have tempted an investment. The progressive advance of the Birmingham Exhibition, from year to year, must have satisfied the most sanguine expectations of its promoters; and the thanks of all who are interested in poultry matters is not merely justly due, but, we believe, most readily rendered. They have advanced the standard of excellence to a point far beyond what would have been believed capable of being realised within this period, at the time their labours were commenced; and this we say without any depreciation of the perseverance and skill of breeders, who, without such encouragement, could hardly have attained their present celebrity. One desideratum, however, still remains; and all that has been yet effected serves the more forcibly to mark the point to which their labours must be still directed. That what is yet required of them is a subject presenting many difficulties, is clearly no reason that those who have already done so much for poultry should anyways despair of success in the still more arduous task to which we would invite them. The promulgation of a general standard of merit, in all our poultry classes, is the matter now required at the hands of the Birmingham committee, and for which they, unquestionably, possess the means best calculated to insure the successful achievement of that task.

Anxiety was manifest in many a countenance among the crowd that besieged the doors of Bingley Hall, on the morning of the 12th instant; and the building speedily

filled after the appointed hour of nine o'clock had passed. The arrangement of the fowls, and their classification in the catalogue, varied from that of last year, *Hamburgs* now commencing the list; and first of them, the golden-pencilled. Here we found a decidedly good class, and the attainment of high excellence in the prize and commended pens. Mr. Worrall's first-prize birds, in the adult division, well deserve their honours. To the silver birds of Mr. Dixon, of Bradford, as the best pencilled pen, was awarded one of the Silver Vases, the coveted object of so many a poultry-keeper's ambition. The adult golden-spangled birds were but indifferent, as is evidenced by the fact of the first prize being withheld. The younger birds, however, were deemed worthy of a vase, in preference of the silver-spangled, although the latter, as a class, might, probably, be considered as generally superior. Few bad specimens, indeed, were present in this last class; and with great pleasure did we notice the absence from the decorated pens of the anomalous hen-tailed cock. One point, it is true, might be derived as materially conducive to the appearance of these birds, that is, the dark markings, spanglings, if possible, of the hackle. In this particular, the male birds, as is well known, are rarely manageable, and their hackle persists in its white, or rather slightly-coloured character, while the spangled has the hen-tail too frequently as its companion. The *Hamburg* breeder, in all the subdivisions of the birds known under that name, must ever keep his eye fixed on the full development of the "white ear-lobe." It is an important characteristic of the race, and can never be safely disregarded. The tail of the cock, in pen 220, was admirable in both form and markings, the sickle feathers exhibiting the perfect spangle at the extremities.

In *Polish*, the competition was severe; the competitors being numerous, and with very high pretensions. The vase assigned to these birds, irrespective of the sub-varieties, fell to the adult golden-spangled of Mr. Conyers, who thus stands first in both this and the *Hamburg* classes; a position, indeed, that necessarily indicates the combination of experience, energy, and skill; Mr. Edwards, as of old, carrying off the first and third prizes; Mr. Adkins occupying the intermediate place. The silver-spangled were numerous and good; the lacing of the crests, in many instances, being greatly in advance of former exhibitions. It certainly appears a matter of greater difficulty to avoid irregularity of formation and confusion of the colours, and the markings of the topknot in the silver than with the golden *Polish*.

The miscellaneous *Polish* class was filled with white, buff, blue, and mottled birds. Among the first-named of them, the topknots of the cock and one hen (331), belonging to Miss Vivian, were perfect in their formation. The buff were shown in good condition; but the mottled or laced were but indifferent. Would that we could chronicle the possibility of some approach to the restoration of the long-lost black-crested *White Polish*; but hitherto, we have had no encouragement to hope, in this country, though tidings have, certainly, been gained of them abroad.

Spanish were a class to which public attention was early and earnestly given. The appearance of new names attached to this class in the prize-list; the absence of the exhibitor to whom the premiums have here so long and continually fallen; as well as the unquestionable advance in the quality of the birds themselves; were prominent features in both this and the *Dorking* classes.

The *Spanish Vase*, is now the property of Mrs. Stow, of Bredon; and well has she deserved the honor, since her birds were exhibited in such form and condition as brought out all the points and features of the *Spanish fowl*. There may, possibly, be better birds, but we never saw a better exhibition pen; although we might regret the slightly drooping character of the cock's comb. Of *Spanish* chicken, there were no less than fifty-one pens. Mr. Rake, of Bristol, being the winner, his pullets were of excessive beauty, as, also, the cockerel, but the latter appeared to stand second to that, belonging to the same gentleman which took the first-prize for the single *Spanish* cocks. Prizes and commendations were numerous, and most deservedly bestowed, in both the old and young divisions. We have little doubt, indeed, that the commended at this show, would, in very many

instances, have been the prize-birds at not a very remote period, even within the walls of Bingley Hall. The judges, especially, must have found this to their cost; for instead of a rapid walk down a line of glaringly red-faced birds, as of old, and a consequent early decision in favour of one or other of the few that were not thus disqualified, competition ran so close, that hours of laborious consideration must have been devoted to the work.

We might extend these remarks to the *Dorkings*, both with respect to the birds, their owners, and the task of adjudicating on their merits. The speckled-breasted cock and light brown hens of the Rev. Mr. Donne, that gained the *Dorking Vase* for their owner, were admirable specimens of it—one of the most useful fowls of the English poultry-yard—their figure, moreover, was seen to the utmost advantage from their high condition in point of feather. The rose-combed birds were scarcely represented, some few pens alone having been entered. If this proceeds from any idea that the rose-comb is, in itself, an objectionable feature, we must strongly dissent from any such notion. The *Dorking* is essentially a table fowl, using this term in opposition to that of a bird of feather. Colour may be, and is, permitted to influence decisions in respect of comparative merit, when the other points are equally balanced; but not so with the comb. In the show-pen they must, indeed, match, whether rose, cupped, or single, and each should be good of its kind; but to say that one or the other indicates a better breed is an unwarranted statement. Individual opinion and taste may determine for itself both these points, and thus we rejoice to see the decision that highly commended a single-combed pen of very stout "white" *Dorkings*, belonging to the Duke of Sutherland. Here the rose-comb would, beyond all doubt, present the most attractive appearance, but in the absence of more valuable qualities can never be received as an equivalent.

The awards in the coloured *Dorking* chicken class commenced with this expression of judicial opinion: "The whole class very meritorious, and deserving the highest commendation." In this all must have concurred; and if our progress another season here, and in *Spanish*, is comparative with what the last year has witnessed, we shall hardly venture to limit the extent to which the improvement of these birds may be carried.

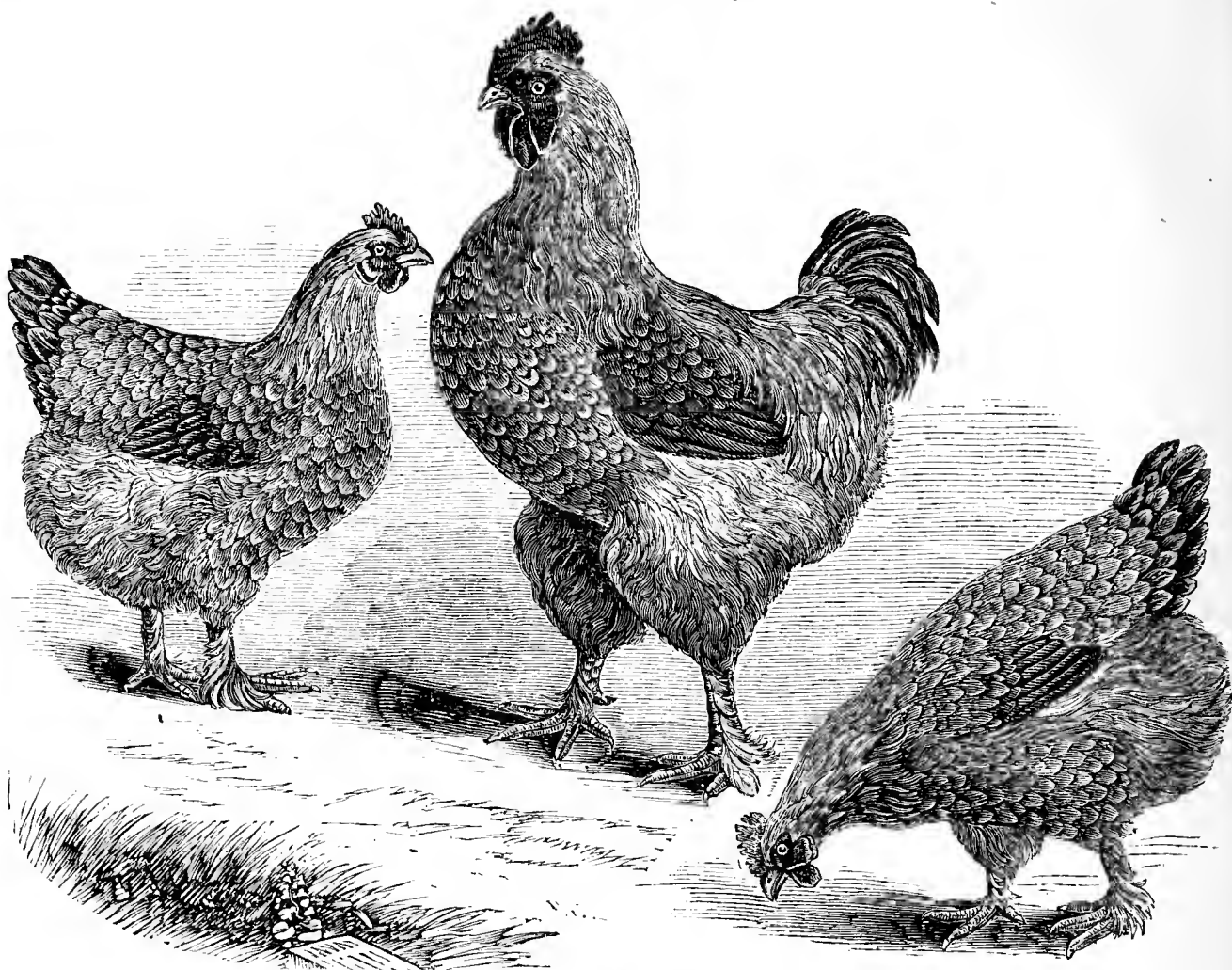
That Mr. Punchard has been the winner of the *Shanghae Vase* will be hailed with satisfaction by all who have known the energy and perseverance by which that gentleman has been distinguished in the Poultry cause. His birds, on the present occasion, were, indeed, excellent in respect of colour, form, condition, and size. The tone of their plumage, though light, is clear and brilliant; and if the male bird approached a lemon tint, he had all the intensity of colour in the hackle, back, and saddle, that obtained for the *Shanghae* the highly descriptive epithet of "flame-coloured." In the old class were many individual birds, combining all the requisite points and features of the family; while of faults complained of in former years, especially unfeathered legs, and bad condition, there were very few instances. Many a pen, however, must have suffered from the presence of mis-shapen, coarse, and wrinkled combs.

The Judges pronounced the *Chicken—Cinnamon and Buff Class*—"excellent," and truly they deserved it. There the first prize was gained by Mrs. Burnett, of Hutton, near Preston, whose birds were well-shaped and coloured, and justly stood first in a class of unusual merit. In Pen 730, which took the second prize, a silver cinnamon cock would have appeared to better advantage than the dark bird with his light companions.

Mr. Hodson has ever been constant to his brown and Partridge-feathered *Shanghaes*; we were prepared, therefore to find him a winner, for his name stands in the second place in the adult class; and in the first and second in the chicken; Mr. Punchard winning the first prize with excellent specimens of his old and well-known breed;

The *White Shanghaes*, especially the chicken, were very good. Discoloration of the leg and other blemishes formerly so constantly present were rarely noticeable; the birds were also shown in excellent condition.

Of *Black Shanghaes*, little may be said; they never stood high in popular estimation; and what we now witnessed will not throw additional lustre on their very questionable race.



Mr. C. T. Nelson took the first prize. He has favoured us with the above portraits of his birds, accompanied by this note:—"Within twenty minutes after the sale-room opened they were sold, much to my regret. These birds have never been beaten, and I firmly believe never will. They took the first prizes at the Royal Agricultural Show at Gloucester, at Derby, and at Birmingham, within the last month."

Under the designation *Bramah Pootras* we found a medley assemblage, without any manifestation of fixed points, or characteristics that would keep us out of the many difficulties that at present beset the mind of an enquirer into their origin. Several among them were stont, well-shaped birds, and of these a preference seemed to be given to the dark-pencilled and the pea-combed. Mr. Allison's old birds were in the post of honour, first and second.

Among the *Single Cocks*, which come next on the catalogue, Mr. Wright's *Dorking* (919) deserves a special notice, with another in pen 921. These were singularly good among an excellent class. Mr. Rake's *Spanish* cockerel has already received the attention at our hands that his merits called for. The prize *Shanghae* cock of Mrs. Donne possessed colour, weight, and form, in a wondrous degree; he was, probably, the heaviest bird in the room. In pen 215, we found the curiosity of a perfectly-pencilled *Hamburgh* cock with a hen-tail, as regularly marked as any hen of his race. He remained unnoticed, as we venture to think a square-tailed *Hamburgh* ever should.

Among the single *Game* cocks, we were immediately struck with the best bird of his kind that it has ever been our good fortune to behold,—a Black-breasted Red, belonging to Mr. France, which walked over the course for the first prize. Symmetry, power, and activity, were united in his form, as were brilliancy of colour and hardness of feather in his plumage.

We now come to the *Game fowls*, where the White and Piles could hardly be called as good a show as those Bingley Hall witnessed in 1853. The Black-breasted Red

mustered strongly, and in both divisions had good specimens; but the Vase was awarded to a pen of Duckwings (Pen 1287), the property of Mr. Brindley, of Kinver. An adjoining pen, 1293, contained admirable birds, that would, probably, have stood very high, had they matched in the colour of their legs.

The *Malays*, the hens especially, were more quarrelsome, and out of temper at confinement, than any of the other birds; several were thus soon maimed, and even scalped. The peculiarities of the *Malay* are so strikingly illustrative of his specific distinctions from other fowls, that we always hail with satisfaction the presence of a good bird of a race, that if left to its own merits, in an economical point of view, would, probably, soon be forgotten among us. The elongated, but powerful limbs, and the peculiar formation of the head, skull, and beak, forming portions of the same curve, were peculiarly well exemplified in a dark cock in Pen 1236.

Among the "*Other distinct breeds*," we had the usual assemblage; some curious, others suspicious; but none, as yet, evidencing a claim to be advanced, in point of utility or beauty, beyond their present position.

However coarsely built may be the *Indian Game* fowl, the the birds shown in 1263 were evidently the produce of *Malay* parents on one side or the other, if not on both. The white had a singularly bare, elevated nostril.

Ptarmigans were altogether eclipsed by the *Turkish fowls* of Miss Watts; pretty little tufted, bearded, hooded curiosities. Mr. Channing's *White Spanish* were the best of a sub-variety, which has little to please in our eyes. Some *Malay Piles* were ticketed "*Rangoon*," and some whiskered, wild-looking *Cossacks*, irregularly spangled in black and white, were side by side, and looking angrily at the "*Farna*" birds of Mr. Naylor.

Mr. Adkins' Gold-laced *Bantams* came first—the cock's tail being very clear and well laced. These may certainly be called a good pen, but the same can hardly be said in favour of the silver birds, which were indifferent in markings,

colour, and form. The white Bantams were neat and meritorious; but too many of the black ones lacked the white earlobe, which adds so greatly to their appearance. The "Game" Bantams, however, were sufficient to retrieve the credit of their race, and we gladly welcomed the booted white birds of Mrs. Hosier Williams—a variety that of late has been unduly neglected.

Mrs. Townley Parker's *Geese* achieved new successes for their owner; the gander was an immense bird, weighing down the scale at 26½ lbs., the whole pen reaching 64 lbs. There were others but little below their weights, but not of the Toulouse, the winners being white, or crossed-bred birds from them. A pen (1450) was represented as being grey-legged, or domesticated wild; if such is the case, their evident close resemblance to the Toulouse would bear out our expressed opinion as to the probable origin of the latter.

The whole class of *Aylesbury Ducks* was pronounced meritorious; the winning pen, 1498, being perfect in form and plumage, and of no less than 28 lbs. weight. The *Rouen Ducks*, however, were inferior; the colour of their race being ill-preserved in the heavier specimens, while those not thus deficient were but small in comparison of what the Rouen Ducks should be and have been.

There were also good pens of the Black *East Indian* and *White Call Ducks*.

Turkeys may be pronounced a decidedly good class; the weight of the young birds especially was most satisfactory, the winning pen being 51 lbs. The vivid and lustrous colouring of the American birds was brilliant in the extreme.

As a whole, very rarely have we witnessed so perfect and interesting an exhibition of *Pigeons*; almost every pen was shown in beautiful condition, and thus became a most attractive feature to the public generally, and still more particularly to the ladies; indeed, the groups of admirers were perhaps greater here than in any other portion of the collection. The *Carriers* were most excellent, and although this variety have become far less important since the introduction of railways and the telegraph, they still are held in high estimation by many of our breeders. The male in the first-prize pen was a *white* one, a bird of well-developed character, and one, we are informed, that had become famous for its daring flights homewards, and that, too, from extremely distant localities. The hen had been sadly injured by her partner, and was consequently exhibited in an adjoining pen. The *Almond Tumblers* were unusually good; the whole of the competing pens being far above mediocrity. The *Balds* and *Beards* were also of high standing, and many of them exceedingly perfect in feather. The *Mottled Tumblers* were all we could desire; indeed, few exhibitions could boast of so close a competition as here existed. The *Owls* were also very good; and among them we noticed that very rare variety the *White* ones. The *Nuns* were very truly-bred Pigeons; but we felt somewhat surprised at the total absence of both the red and also yellow-headed varieties, as (though difficult to procure) not unfrequently the finest specimens exist under these colours. The *Archangels* were good; the *Jacobins* still more so; reds, yellows, and blues contending for the premiums. The *Fantails* were considered, by those competent of forming a correct opinion, as the most complete that have as yet been presented to the public; indeed, difficult must the task have been of assigning the prizes where all were so excellent. The *Trumpeters* mustered strongly, and ranged very high as to close-breeding; consequently, two pens, independent of the winners, obtained "high commendations." The whites were the best of the *Croppers*, the others were, undoubtedly, indifferent. The *Barbs* contained most deserving specimens of both whites and also buffs, each of which are extremely rare. The *Runts* were the most imperfect of any variety in the whole collection. The *Dragoons* were beautiful; some of the competing pens have, undoubtedly, never been excelled; perhaps, never equalled.

In the class for any new and distinct variety of Pigeons, were exhibited some very superior *Pouterclains*; and two pens of that rare and all-but-extinct species, the *Frill-backs*. This is a very unique and beautiful variety: the whole of the back feathers curling similarly to those in the tail of the wild Mallard; they are proverbially difficult to rear, and we confess great pleasure in noticing them at Birmingham. There was, throughout the whole collection, an almost

total absence of indifferent specimens, and from this cause, the present year can boast of vastly superior birds to those of preceding ones, though somewhat now limited as to numbers. Only one single pen of Pigeons was exhibited by cottagers; indeed, our own impression is, most undoubtedly, that the society's premiums for cottagers are by far best if restricted to deserving specimens of FOWLS ONLY, as the raising of Pigeons is not calculated to produce equal pecuniary returns; and contingencies sometimes are attendant on their cultivation by cottagers, not by any means calculated to promote the general peace of the neighbourhood. In the one instance referred to, the pen possessed no particular merit, and was, therefore, passed over by the judges without comment.

Our review must now close, and as a brief summary of the Great English Poultry Show of 1854, we may speak of it as most eminently successful; and its peculiar characteristic, the comparative absence not merely of inferiority, but even of mediocrity, in the specimens there assembled.

Those who have been annually connected with this society have long felt the obligation rendered to it by Mr. J. B. Wright, whose constant attention and unceasing care has been bestowed on the management of the association, from the very commencement down to the present day. In accordance with this general expression, it has been determined to present that gentleman with a testimonial, in evidence of the feeling entertained with reference to his services so continuously and successfully bestowed. A subscription for this purpose has been commenced, of which Mr. Shackel, of Blenheim House, near Birmingham, is the treasurer.

The system of management, on the present occasion, has also been admirably conceived, and most efficiently executed, and the owners of the fowls are one and all indebted, and that, too, in no slight degree, to Mr. Hewitt, on whom devolved the daily and onerous duty of superintending the feeding and inspecting the condition of the birds. Early and late has he been thus occupied, and the remarkably healthy state of the poultry generally, is ample testimony of his most careful supervision.

The following gentlemen officiated as Judges.

JUDGES OF POULTRY.—The Honourable and Reverend Stephen Willoughby Lawley, Eserick Rectory, near York. George James Andrews, Esq., Dorchester. Mr. John Baily, Mount Street, Grosvenor Square, London. The Reverend Robert Palleine, The Rectory, Kirby Wiske, near Thirsk. The Reverend William Wriothsley Wingfield, Gulval Vicarage, Penzance. William Symonds, Esq., Rodwell House, Weymouth. Mr. Thomas Challeuor, Burnt Leys, near Whitwell, Worksop, Notts.

JUDGES OF PIGEONS.—Mr. Hale, Handsworth. Mr. T. L. Parker, Birmingham.

Class 1.—GOLDEN-PENCILLED HAMBURGH.—For the best Cock and three Hens exceeding one year old.—6. First prize, Mr. William Clare Worrall, Rice House, Knotty Ash, Liverpool. 7. Second prize, Mr. James Howard, Bedford. 5. Third prize, Miss Agnes Whittington, Wootton Wawen, near Henley-in-Arden.

Class 2.—GOLDEN-PENCILLED HAMBURGH.—For the best Cock and three Pullets, Chicken of 1854.—37. First prize, Mr. William Tyler, Friday Bridge, Birmingham. 17. Second prize, Mrs. Thomas L. Fellowes, Beighton Rectory, Acle, Norfolk. 26. Third prize, Mr. John Lowe, Bull Ring, Birmingham. Commended.—27. Mr. William Clare Worrall, Rice House, Knotty Ash, Liverpool.

Class 3.—GOLDEN-SPANGLED HAMBURGH.—For the best Cock and three Hens exceeding one year old.—52. Second prize, Mr. George Hartwell Perkins, Gothic Cottage, Stony Lane, Moseley, near Birmingham. 41. Third prize, Mr. Charles Sturge, Frederick Street, Edgbaston, Birmingham. (First prize withheld.)

Class 4.—GOLDEN-SPANGLED HAMBURGH.—For the best Cock and three Pullets, Chicken of 1854.—74. First prize, The SILVER VASE, Mr. Joseph Conyers, 42, Boar Lane, Leeds. 68. Second prize, Mr. Charles Horstall, Duffield Bank House, near Derby. 102. Third prize, Mr. Joseph Tulcy, Matchless House, Keighley, Yorkshire.

Class 5.—SILVER-PENCILLED HAMBURGH.—For the best Cock and three Hens exceeding one year old.—114. First prize, The SILVER VASE, Mr. C. S. Dixon, Sun Bridge, Bradford, Yorkshire. 110. Second prize, Mr. Edward Archer, Malvern. 129. Third prize, Mr. C. S. Dixon, Sun Bridge, Bradford, Yorkshire.

Class 6.—SILVER-PENCILLED HAMBURGH.—For the best Cock and three Pullets, Chicken of 1854.—148. First prize, Mr. John Andrew, Waterhouses, near Ashton-under-Lyne. 150. Second prize, Mr. William Cannan, Bradford, Yorkshire. 126. Third prize, Mrs. Thomas L. Fellowes, Beighton Rectory, Acle, Norfolk. Commended.—125. Miss Frances Patteson, Feniton Court, Honiton, Devonshire.

Class 7.—SILVER-SPANGLED HAMBURGH.—For the best Cock and three Hens exceeding one year old.—160. First prize, The Rev. Frederick Cartwright, Oakley, Thame. 157. Second prize, Mrs. William Beach, Monument Lane, Birmingham. 172. Third prize, Mr. James Whilock, 15, High-street, Birmingham. (This class meritorious.)

Class 8.—SILVER-SPANGLED HAMBURGH.—For the best Cock and three Pullets, Chicken of 1854.—220. First prize, Mr. Josiah B. Chune, Coalbrookdale. 188. Second prize, Mrs. Dixon, North Park, Horton, near Bradford, Yorkshire. 180. Third prize, Mrs. Thomas L. Fellowes, Beighton Rectory, Acle, Norfolk. Commended.—204. Mr. Joseph Symonds, Gorwell, near Dorchester. (This class meritorious.)

Class 9.—POLISH FOWL (Black, with White Crests).—For the best Cock and three Hens, exceeding one year old.—241. First prize, Mr. Thomas Pantou Edwards, Railway Station, Lyndhurst, Hampshire. 237. Second prize, Mr. George C. Adkins, West House, Edgbaston, Birmingham. 245. Third prize, Mr. Thomas Pantou Edwards, Railway Station, Lyndhurst, Hampshire.

Class 10.—POLISH FOWL (Black, with White Crests).—For the best Cock and three Pullets, Chicken of 1854.—250. First prize, Mr. E. B. Guest, Ivy House, Broadwas, Worcestershire. 257. Second prize, Mr. Thomas Battye, Brownhill Upper Mill, Holmbridge, near Huddersfield. 248. Third prize, Colonel Clowes, Froxmer Court, near Worcester.

Class 11.—POLISH FOWL (Golden).—For the best Cock and three Hens exceeding one year old.—264 First prize, The SILVER VASE, Joseph Conyers, 42, Boar Lane, Leeds. 260 Second prize, Robert H. Bush, Esq., Liffeld House, Clifton, near Bristol. 267 Third prize, Cyrus Clark, Street, near Glastonbury.

Class 12.—POLISH FOWL (Golden).—For the best Cock and three Pullets, Chicken of 1854.—273 First prize, Mrs. Mills, Bisterne, near Ringwood, Hampshire. 276 Second prize, The Rev. Richard Greenall, Grappenhall, Cheshire. 293 Third prize, Thomas Masser, Sawrey Place, Bradford, Yorkshire.

Class 13.—POLISH FOWL (Silver).—For the best Cock and three Hens exceeding one year old.—304 First prize, George C. Adkins, West House, Edgbaston, Birmingham. 300 Second prize, Miss Emily Breavington, Heston, Middlesex. 307 Third prize, Cyrus Clark, Street, near Glastonbury.

Class 14.—POLISH FOWL (Silver).—For the best Cock and three Pullets, Chicken of 1854.—327 First prize, P. Jones, High-street, Fulham, London. 317 Second prize, Edward William Haslewood, Bridgnorth. 325 Third prize, William Barker, Crowle, Worcester. Commended.—315 William Cox, Esq., Brailsford Hall, Derby. 326 Robert Chase, Mosley-road, Birmingham.

Class 15.—POLISH FOWL (Of any other variety).—For the best Cock and three Hens exceeding one year old.—331 First prize, Miss Vivian, Singleton, Glamorganshire (White). 330 Second prize, Miss E. Eden, Bryn, near Swansea (Blue). 331 Third prize, Henry Churchill, Gloucester (White-crested White).

Class 16.—POLISH FOWL (Of any other variety).—For the best Cock and three Pullets, Chicken of 1854.—338 First prize, W. Graham Vivian, Esq., Singleton, Glamorganshire (Yellow). 337 Second ditto, Mrs Vivian, Singleton, Glamorganshire (Laced). (Third prize withheld.)

Class 17.—SPANISH.—For the best Cock and three Hens, exceeding one year old.—340 First prize, The SILVER VASE, Mrs Stow, Bredon, near Tewkesbury. 357 Second prize, Thomas Cole, Lord's Wood Road, High Harborne, near Birmingham. 351 Third prize, Joseph Allison, Friar's Place, Acton, Middlesex. Highly Commended.—344 George Botham, Esq., Wexham Court, Slough, Buckinghamshire. 373 William Plummer, Brislington, near Bristol. Commended.—349 Michael Potter, Prestwich, near Manchester. 366 Edward Simons, Dale End, Birmingham. 367 Arthur Allison, Friar's Place, Acton, Middlesex. 369 Edward Simons, Speedwell-road, Birmingham.

Class 18.—SPANISH.—For the best Cock and three Pullets, Chicken of 1854.—398 First prize, Joseph Rake, Bristol. 404 Second prize, William Saunders, Egypt Cottage, Cowes, Isle of Wight. 430 Third prize, William Plummer, Brislington, near Bristol. Highly Commended.—382 Mrs Stow, Bredon, near Tewkesbury. 388 Mr John Harrison, jun., Snelston Hall, near Ashbourne, Derbyshire. 391 George C. Adkins, West House, Edgbaston, Birmingham. Commended.—379 Mrs Stow, Bredon, near Tewkesbury. 386 James Bell, Woodhouselees, Canonbie, Carlisle. 390 James Bell, Woodhouselees, Canonbie, Carlisle. 400 Peter Eden, Cross Lane, Salford. 401 Thomas Cole, Lord's Wood Road, High Harborne, near Birmingham. 405 Richard Cox, Highfield Road, Edgbaston, Birmingham. 424 William Plummer, Brislington, near Bristol.

Class 19.—DORKING (Coloured).—For the best Cock and three Hens exceeding one year old.—52 First prize, The SILVER VASE, The Rev. Stephen Donne, Oswestry. 466 Second prize, Edward Lister, Esq., Cassia Lodge, Northwich, Cheshire. 433 Third prize, The Lady Eleanor Cathcart, Cooper's Hill, Chertsey, Surrey. Highly Commended.—437 Mrs Thomas Townley Parker, Astley Hall, Chorley, Lancashire. 477 Edward Lister, Esq., Cassia Lodge, Northwich, Cheshire. Commended.—441 Miss Elizabeth Steele Perkins, Sutton Coldfield (Speckled). 444 Mrs Donne, Oswestry. 450 The Reverend Frederic Thursby, Abington, near Northampton. 458 William J. Drewry, Newton Mount, near Burton-upon-Trent.

Class 20.—DORKING (Coloured).—For the best Cock and three Pullets, Chicken of 1854.—533 First prize, Mr Henry Smith, The Grove, Cropwell Butler, near Bingham. (Single-combed.) 507 Second prize, Mrs George C. Adkins, West House, Edgbaston, near Birmingham. 529 Third prize, The Rev. James Boys, Biddenden, Kent. Highly Commended.—486 The Lady Evelyn Stanhope, Bretby Hall, 490 The Right Honourable Lord Berwick, Cronkhill, Shropshire. 498 Mrs Townley Parker, Astley Hall, Chorley, Lancashire. (Grey.) 503 Miss Steele Perkins, Sutton Coldfield. (Speckled.) 513 Mrs Mason, The Old Hall, Great Barr. 522 The Rev. Stephen Donne, Oswestry. 541 Mr James Bell, Woodhouselees, Canonbie, Carlisle. 580 Mr

William Wright, West Bank, Widnes, near Warrington, Lancashire. (Grey.) 588. Edward Lister, Esq., Cassia Lodge, Northwich, Cheshire. Commended.—497 Townley Parker, Esq., Astley Hall, Chorley, Lancashire. (Grey.) 509 Mrs Hanbury, Thorn Bank, Leamington. 600 Mr Edward Gwynn, Wem, Shropshire. 601 Messrs. Thomas Ullock and Daniel Harrison, Kendal, Westmoreland. 602 Mr William Smith, May's Hill Farm, Henley-in-Arden. (The whole class very meritorious, and deserving the highest commendation.)

Class 21.—DORKING (White).—For the best Cock and three Hens exceeding one year old.—607 First prize, Mrs Jenuens, Mosely, near Birmingham. 913 Second prize, Mr Charles Edwards, Brislington, near Bristol. 610 Third prize, Mrs Jennens, Mosely, Birmingham. Highly Commended—Mrs Mills, Bisterne, Ringwood, Hampshire.

Class 22.—DORKING (White).—For the best Cock and three Pullets, Chicken of one year old.—623 First prize, Francis James Coleridge, Esq., Ottery St. Mary, Devonshire. 616 Second prize, The Right Honourable the Countess of Dartmouth, Patshull, near Shiffall. 630 Third prize, George Barker, Madresfield, Worcestershire (Double-Combed). 615 Highly Commended—His Grace the Duke of Sutherland, Trentbam Hall, Staffordshire.

Class 23.—COCHIN-CHINA (Cinnamon and Buff).—For the best Cock and three Hens exceeding one year old.—641 First prize, The SILVER VASE, Mr Charles Punchard, Blunt's Hall, Haverhill, Suffolk. 653 Second prize, William Beach, Monument Lane, Birmingham. 658 Third prize, George Meakin, Burton-upon-Trent.

Class 24.—COCHIN-CHINA (Cinnamon and Buff).—For the best Cock and three Pullets, Chicken of 1845.—737 First prize, Thomas Burnett, Hutton, near Preston, Lancashire. 737 Second prize, Thomas Smith, Stableford, near Bridgnorth. 673 Third prize, Mrs Herbert, Powick Worcestershire. Highly Commended.—682 The Rev. George Gilbert, Chedgrave, near Loddon, Norfolk. 686 Alfred Sturgeon, The Elms, Grays, Essex. 713 Alfred Sturgeon, The Elms, Grays, Essex. 667 Mrs Herbert, Powick, Worcestershire. Commended.—690 John Mell, Hessele, near Hull. 698 Joseph S. Stoek, Bourn Brook, near Birmingham. 663 The Right Honourable Lord Berwick, Cronkhill, Shrewsbury. 670 Mrs William Wright, West Bank, Widnes, Warrington. (An excellent class.)

Class 25.—COCHIN-CHINA (Brown, and Partridge-feathered).—For the best Cock and three Hens exceeding one year old.—751 First prize, Charles Punchard, Blunt's Hall, Haverhill, Suffolk. 748 Second prize, The Rev. Grenville F. Hodgson, Banwell, Somersetshire (Shanghai). 749 Third prize, Thomas Lowe, Whatley, Tamworth.

Class 26.—COCHIN-CHINA (Brown, and Partridge-feathered).—For the best Cock and three Pullets, Chicken of 1854.—764 First prize, The Rev. Grenville F. Hodgson, Banwell, Somersetshire. 763 Second prize, The Rev. Grenville F. Hodgson, Banwell, Somersetshire. 766 Third prize, Peplow Cartwright, Esq., Oswestry.

Class 27.—COCHIN-CHINA (White).—For the best Cock and three Hens exceeding one year old.—776 First prize, Cyrus Clark, Street, near Glastonbury. 772 Second prize, Mrs Herbert, Powick, Worcestershire. 778 Third prize, Cookson Stephenson Floyd, Sands, Holmfirth, Yorkshire.

Class 28.—COCHIN-CHINA (White).—For the best Cock and three Pullets, Chicken of 1854.—799 First prize, James Turner, Northbrook, near Exeter. 803. Second prize, James Turner, Northbrook, near Exeter. 785 Third prize, Mrs Cattell, 53, Worcester-street, Birmingham. Highly Commended.—786 Miss C. Aleock, Edgmond, Newport, Shropshire. 788 Edmund Herbert, Powick, Worcestershire. 800 James Buckley, Penyfid House, Llanelly, Carmarthenshire. 782 Mrs Herbert, Powick, Worcestershire. Commended.—793 Cyrus Clark, Street, near Glastonbury. (A very good class.)

Class 29.—COCHIN-CHINA (Black).—For the best Cock and three Hens exceeding one year old.—809 First prize, Charles Thomas Nelson, The Lozells, near Birmingham. 807 Third prize, Valentine Walshman Blake, 6, Old Square, Birmingham. (Second prize withheld.)

Class 30.—COCHIN-CHINA (Black).—For the best Cock and three Pullets, Chicken of 1854.—820 First prize, Thomas Smith, Stableford, near Bridgnorth. 816 Second prize, William Wanklyn, jun., Green Bank, Bury, Lancashire. 815 Third prize, Joseph Bent, 35, Monument Lane, Birmingham. Commended.—812 Valentine Walshman Blake, 6, Old Square, Birmingham.

Class 31.—BRAMAH POOTRA FOWLS.—For the best Cock and three Hens exceeding one year old.—827 First prize, Joseph Allison, Friar's Place, Acton, Middlesex. 826 Second prize, Arthur Allison, Friar's Place, Acton, Middlesex. 823 Third prize, Mrs. Frederic Thursby, Abington, near Northampton.

Class 32.—BRAMAH POOTRA FOWLS.—For the best Cock and three Pullets, Chicken of 1854.—850 First prize, James Aldridge Devenish, Weymouth. 839 Second prize, Robert H. Bush, Esq., Liffeld House, Clifton, near Bristol. 857 Third prize, W. G. Simons, Speedwell Road, Birmingham.

Class A.—DORKING.—For the best Cock of any age.—919 First prize, William Wright, West Bank, Widnes, near Warrington (Grey). 921 Second prize, Messrs. Thomas Ullock and Daniel Harrison, Kendal (Coloured). Highly Commended.—864 The Honourable and Reverend Henry Noel Hill, Berrington, Shrewsbury. 870 Miss Elizabeth Smith, The Grove, Cropwell Butler, near Bingham, Nottinghamshire (Single-combed Grey). 873 Miss Elizabeth Smith, The Grove, Cropwell Butler, near Bingham, Nottinghamshire (Single-combed Grey). 902 James Drewry, Newton Mount, near Burton-upon-Trent. Commended.—909 Henry Smith, The Grove, Cropwell Butler, near Bingham, Nottinghamshire (Single-combed Grey). (A very excellent class.)

Class B.—SPANISH.—For the best Cock of any age.—941 First prize, Joseph Rake, Bristol. 932 Second prize, John S. Henry, Woodlands, Crumpsall, near Manchester. Highly Commended.—933 E. W. Wilmot, Hulme Walfield, near Congleton. 935 Henry Openshaw, Wilton Polygon, Chetham Hill, near Manchester. 950 Joseph Rake,

Bristol. Commended.—931 John Ireland Blackburne, Esq., Light Oaks, Cheadle, Staffordshire (White-faced). (The whole Class commended.)

Class C.—COCHIN-CHINA.—For the best Cock of any age.—959 First prize, Mrs. Doune, Oswestry (Buff). 981 Second prize, G. A. Gelderd, Aekrigg End, Kendal. Commended.—961 Mrs. Snapp, Perry Barr, near Birmingham (White). 973 Thomas Stretch, Marsh Lane, Bootle, Liverpool. 989 Thomas Hincks, Penn Fields, near Wolverhampton. 990 Thomas Bridges, Croydon, Surrey (Cinnamon). 998 George McCann, Graham House, Malvern (Buff).

Class D.—BRAMAH POOTRA.—For the best Cock of any age.—1010 First prize, Charles Punchard, jun., Blunt's Hall, Haverhill, Suffolk. 1006 Second prize, Christopher Dain, Southampton. Commended.—1004 The Rev. Charles H. Crosse, M.A., New Square, Cambridge. 1014 James Aldridge Devenish, Weymouth.

Class E.—PENCILLED HAMBURGH.—For the best Cock of any age.—1022 First prize, Edward Archer, Malvern (Silver). 1024 Second prize, John Whalley, Stockbridge (Silver).

Class F.—SPANGLED HAMBURGH.—For the best Cock of any age.—1032 First prize, Mrs. Joseph Conyers, 42, Boar Lane, Leeds (Golden). 1049 Second prize, Josiah B. Chune, Severn Cottage, Coalbrookdale (Silver).

Class G.—GAME.—For the best Cock of any age.—1066 First prize, Edward H. France, Esq., Ham Hall, near Worcester. 1094 Second prize, Edward Harris Strange, Amptill, Bedfordshire (Black-breasted Red). Highly Commended.—1076 John Yardley, Comberford Hall, near Tamworth (Black-breasted Red). Commended.—1089 Edward Glover, Olton Green, Solihull (Black Red).

Class H.—POLISH.—For the best Cock of any age.—1102 First prize, Mrs. George C. Adkins, West House, Edgbaston, Birmingham. 1111 Second prize, George Hartwell Perkins, Gothic Cottage, Stony Lane, Moseley, near Birmingham (White-crested Black).

Class 33.—GAME FOWL (White and Piles).—For the best Cock and three Hens exceeding one year old.—1127 First prize, William Hopkinson, Worksop, Nottinghamshire. 1131 Second prize, Robert Choyce, Bramcote Hall, near Tamworth. 1128 Third prize, Richard Dummeller, Shackerstone Field, near Atherstone.

Class 34.—GAME FOWL (White and Piles).—For the best Cock and three Pullets, Chicken of 1854.—1159 First prize, John Lane, Goodrest, Warwick. 1164 Second prize, David Joseph Arnold, Tamworth. 1152 Third prize, William Hopkinson, Worksop, Nottinghamshire. Commended.—1140 Mrs. Adkins, Edgbaston, Birmingham.

Class 35.—GAME FOWL (Black-Breasted and other Reds).—For the best Cock and three Hens exceeding one year old. 1178 First prize, Edward Lowe, Comberford Mills, near Tamworth. 1166 Second prize, Mrs. Adkins, Edgbaston, Birmingham. 1177 Third ditto, James Thomas Wilson, Redditch, Worcestershire. Commended.—1174 John Yardley, Comberford Hall, near Tamworth.

Class 36.—GAME FOWL (Black-breasted and other Reds).—For the best Cock and three Pullets, Chicken of 1854.—1224 First prize, Edward Freer, jun., Castle Bromwich. 1229 Second prize, Nathan N. Dyer, Bredon, near Tewkesbury. 1208 Third prize, Tertius Thomas Burman, Olton House, near Solihull. Commended.—1219 Edward H. France, Esq., Ham Hill, near Worcester. 1233 William Hopkinson, Worksop, Nottinghamshire. 1237 Edward Lowe, Comberford Mills, near Tamworth. 1244 Edward Glover, Olton Green, Solihull.

Class 37.—GAME FOWL (Blacks and Brassy-winged, except Greys).—For the best Cock and three Hens exceeding one year old.—1261 First prize, Charles Hopkins, Newton Regis, Warwickshire. 1256 Second prize, William Vickerman Drake, Lockwood, near Huddersfield. 1263 Third prize, Nathan N. Dyer, Bredon, near Tewkesbury. Commended.—1253 Joseph Jennens, Moseley, near Birmingham.

Class 38.—GAME FOWL (Blacks and Brassy-winged, except Greys).—For the best Cock and three Pullets, Chicken of 1854.—1277 First prize, Richard Field, Bragg's Farm, Shirley Street, near Birmingham. 1280 Second prize, Richard Field, Bragg's Farm, Shirley Street, near Birmingham. 1269 Third prize, Henry Felthouse, Tamworth. Highly Commended.—1265 Mrs. Wilson, Redditch, Worcestershire. Commended.—1266 Richard C. Naylor, Hooton Hall, Cheshire. (This class is highly meritorious.)

Class 39.—GAME FOWL (Duckwings, and other Greys and Blues).—For the best Cock and three Hens exceeding one year old.—1287 First prize, SILVER VASE, J. P. Brindley, Union Hall, Kinvor, Staffordshire. 1295 Second prize, John Rogers, King's Norton, Worcestershire. (Birchen Grey.) 1285 Third prize, Robert Choyce, Bramcote Hall, near Tamworth. Commended.—1266 William Cherrington, Stockton, Shifnal. 1292 James H. Parkes, Wellington Place, Highgate, Birmingham.

Class 40.—GAME FOWL (Duckwings, and other Greys and Blues).—For the best Cock and three Pullets, Chicken of 1854.—1301 First prize, John Wright, Esq., Hulland Hall, Ashbourne. 1319 Second prize, John Rogers, King's Norton, near Birmingham. (Birchen Grey.) 1300 Third prize, John Wright, Esq., Hulland Hall, Ashbourne. Highly Commended.—1320 Master John Lowe, Bull Ring, Birmingham. Commended.—1315 William Van Wart, Hagley Road, Edgbaston, Birmingham.

Class 41.—MALAY.—For the best Cock and three Hens exceeding one year old.—1331 First prize, James Leighton, Cheltenham, Gloucestershire. 1326 Second prize, James Leighton, Cheltenham, Gloucestershire. (Third prize withheld.)

Class 42.—MALAY.—For the Best Cock and three Pullets, Chicken of 1854.—1339 First prize, Charles Ballance, 5, Mount Terrace, Taunton, Somersetshire. 1337 Second prize, James Leighton, Cheltenham, Gloucestershire. (Third prize withheld.)

Class 43.—FOR ANY OTHER DISTINCT BREED.—1348 Second prize, Colonel Clowes, Froxmer Court, Worcester (Andalusian). 1343 Third

prize, Mrs Mackenzie Kettle, Dallicott House, Bridgnorth (Cuckoo). Commended.—1344 William J. Drewry, Newton Mount, near Burton-upon-Trent (Cuckoo). 1355 William Endall, Henley-in-Arden (Andalusian). 1361 Joseph Jorden, Waterfall Cottage, Wheeler Street, Birmingham (Black Hamburgh). 1365 The Rev. John Meredith, Donington, near Wroxeter, Shropshire (Indian Game). 1368 William Mansfield Bill, Highter's Heath Farm, King's Norton, near Birmingham (Negroes). 1373 Miss Elizabeth Watts, Monk Barns, Hampstead, Middlesex (Turkish). 1382 Mrs. Shaeckel, Blenheim House, Small Heath, near Birmingham (Rangoon). 1388 W. L. Channing, Heavitree, near Exeter (White Spanish). (First prize withheld.)

Class 44.—BANTAMS (Gold-laced).—For the best Cock and two Hens.—1392 First prize, Mrs Adkins, Edgbaston, Birmingham. 1397 Second prize, The Rev. John Hill, Citadel, Hawkestone, Shrewsbury.

Class 45.—BANTAMS (Silver-laced).—For the best Cock and two Hens.—1403 First prize, Mrs Gilbert W. Moss, Liverpool. 1401 Second prize, The Rev. Grenville F. Hodson, Banwell, Somersetshire.

Class 46.—BANTAMS (White).—For the best Cock and two Hens.—1415 First prize, Thomas Barker, Leeds. 1407 Second prize, Mrs Gilbert W. Moss, Liverpool.

Class 47.—BANTAMS (Black).—For the best Cock and two Hens.—1420 First prize, Gilbert W. Moss, Liverpool. 1428 Second prize, J. B. Winder, Birmingham. Highly Commended.—1423 Charles Ballance, 5, Mount Terrace, Taunton, Somersetshire. 1427 Charles Thornloe, Lichfield. 1417 The Right Honourable the Countess of Oxford, Brampton Bryan Hall, Herefordshire. (Class highly commended.)

Class 48.—BANTAMS (Any other Variety).—For the best Cock and two Hens.—1444 First prize, Charles Steele Perkins, Sutton Coldfield (Game). 1443 Second prize, W. S. Forrest, Greenhithe, Kent (Black-breasted Red). Highly Commended.—1436 Mrs. Hosier Williams, Eaton Mascott, near Shrewsbury (White Booted). 1442 William Elkington, Lichfield (Partridge). 1445 W. S. Forrest, Greenhithe, Kent (Duckwing).

Class 49.—GESE (For the best Gander and Two Geese).—1455 First prize, Mrs Thomas Townley Parker, Astley Hall, Chorley, Lancashire (Common). 1450 Second prize, Mrs Hill, Nero House, Stratton Grandison, Herefordshire. 1456 Third prize, The Rev Thomas O'Grady, Hognaston, Ashbourne, Derbyshire (Improved Common English White).

Class 50.—DUCKS—WHITE AYLESBURY (For the best Drake and three Ducks). 1498 First prize, Joseph Jennens, Moseley, near Birmingham. 1468 Second prize, Mrs B. J. Ford, Idc, near Exeter. 1496 Third prize, John Weston, Aylesbury. Commended.—1479, Henry Worrall, Knotty Ash House, near Liverpool. 1484 John Weston, Aylesbury. 1487 John Kersley Fowler, Aylesbury. 1502 Mrs. W. G. K. Breavington, Vicarage Farm, Hounslow, Middlesex (The whole Class generally meritorious).

Class 51.—DUCKS ROUEN.—(For the best Drake and three Ducks).—1505 First prize, Henry Worrall, Knotty Ash House, near Liverpool. 1514 Second prize, Charles Punchard, jun., Blunt's Hall, Haverhill, Suffolk. 1510 Third prize, Henry Worrall, Knotty Ash House, near Liverpool.

Class 52.—DUCKS.—(Any other Variety).—For the best Drake and three Ducks).—1530 First prize, John Beasley, Chapel Brampton, Northampton (Buenos Ayres, or East Indian). 1529 Second prize, Master Charles Steele Perkins, Sutton Coldfield (Buenos Ayres, or Labrador). 1528 Third prize, Henry Herbert, Powick, near Worcester (Improved Labrador). Highly Commended.—1517 Edmund Herbert, Powick, Worcestershire (White Call). 1523 Mrs. Charles Edwards, Brisington, near Bristol (Buenos Ayres). Commended.—1520 Mrs Henry Worrall, Knotty Ash House, near Liverpool (Brown Call).

Class 53.—DUCKS MUSCOVY.—(For the best Drake and three Ducks).—1543 Prize, John Tye, Heathfield Road, Huddersworth, near Birmingham.

Class 54.—TURKEYS.—(For the best Turkey Cock and two Hens exceeding one year old).—1522 First prize, Richard Meire, Cound Arbour, near Shrewsbury (Cambridgeshire). 1555 Second prize, Charles Edwards, Brisington, near Bristol (Cambridgeshire). 1544 Third prize, The Right Honourable Viscount Hill, Hawkestone, Shropshire (American) Highly Commended.—1548 E. W. Wilmot, Hulme Walfield, near Congleton (Wild American) (Very good Class).

Class 55.—TURKEYS (For the best Turkey Cock and Two Hens hatched in 1854). 1559 First prize, Richard Meire, Cound Arbour, near Shrewsbury (Cambridgeshire). 1573 Second prize, Joseph Dagnall Muddiman, Aylesbury. 1563 Third prize, Richard Meire, Cound Arbour, near Shrewsbury (Cambridgeshire). Highly Commended.—1569 The Rev. J. R. Rumsey, Carlton Rectory, Newmarket. 1570 E. W. Wilmot, Hulme Walfield, near Congleton. (Very good Class.)

PIGEONS.

Class 1.—CARRIERS.—1580 First prize, Edward Barber, jun., Monks-path, Warwickshire. 1577 Second prize, Messrs. W. Siddons and Sons, Aston, near Birmingham. Highly Commended.—1582 Samuel Ridley, jun., Clayton, Sussex.

Class 2.—ALMOND TUMBLERS.—1587 First prize, Dr. Rogers, Honiton, Devonshire. 1586 Second prize, Thomas James Cottle, Pulteney Villa, Cheltenham. Highly commended.—1591 Howard Luckcock, Esq., Oak Hill, Edgbaston, Birmingham.

Class 3.—BALDS OR BEARDS.—1597 First prize, Harrison Weir, Lyndhurst Road, Peckham, Surrey (Red). 1594 Second prize, John Percivall, Clent Villa, Harborne, near Birmingham.

Class 4.—MOTTLED TUMBLERS.—1602 First prize, Jones Percivall, 13, Queen's Row, Walworth, Surrey (Black). 1600 Second prize, John Percivall, Clent Villa, Harborne, near Birmingham (Black). Commended.—1599 Charles Richard Titterton, near Birmingham.

Class 5.—OWLS.—1605.—First prize, W. H. Simpson, Islington, Birmingham (Turned-headed). 1610 Second prize, W. L. Channing,

Heavitree, Exeter. Commended.—1608 William H. Goddard, Edgbaston, Birmingham (Silver). 1612 John Edwards Mapplebeck, Bull Ring, Birmingham (Yellow).

Class 6.—NUNS.—1616 First prize, W. H. Simpson, Islington, Birmingham. 1613 Second prize, John Edwards Mapplebeck, Bull Ring, Birmingham (Black).

Class 7.—TURBITS.—1621 First prize, Charles Richard Titterton, Snow Hill, Birmingham. 1619 Second prize, Thomas James Cottle, Pulteney Villa, Cheltenham (White). Highly Commended.—1625 Harrison Weir, Lyndhurst Road, Peckham, Surrey (Red). Commended.—Henry Snow, High Street, Birmingham.

Class 8.—ARCHANGELS.—1626 First prize, Jones Percivall, 13, Queen's Row, Walworth, Surrey. 1923 Second prize, Thomas James Cottle, Pulteney Villa, Cheltenham. Commended.—1627 Henry Child, jun., Sherborne Road, Balsall Heath, Birmingham.

Class 9.—JACOBINES.—1639 First prize, Henry Child, jun., Sherborne Road, Balsall Heath, near Birmingham. 1636 Second prize, S. T. Baker, Manor House, King's Road, Chelsea, London. Highly Commended.—1635 Jones Percivall, 13, Queen's Road, Walworth, Surrey (Yellow). Commended.—1632 John Amphlett, Walsall, Staffordshire (White).

Class 10.—FANTAILS.—1656 First prize, Harrison Weir, Lyndhurst Road, Peckham, Surrey (White). 1651 Second prize, Joshua Hopkins, 39, Dale End, Birmingham (Black). Highly Commended.—1648 W. H. Simpson, Islington, Birmingham. Commended.—1642 W. H. Simpson, Islington, Birmingham.

Class 11.—TRUMPETERS.—1657 First prize, Miss Timmis, Lincoln Hill, Coalbrookdale.—1659 Second prize, Charles Richard Titterton, Snow Hill, Birmingham. Highly Commended.—1665 Thomas Beetonson, 7, New Bridge Street, Birmingham. 1667 John Edwards Mapplebeck, Bull Ring, Birmingham (White).

Class 12.—POUTERS OR CROPPERS.—1671 First prize, Messrs. W. Siddons and Sons, Aston, near Birmingham. 1675 Second prize, Mrs. Edward Simons, Speedwell Road, Birmingham (White). Commended.—1676 Henry Child, jun., Sherborne Road, Balsall Heath, near Birmingham. 1677 Messrs. W. Siddons and Sons, Aston, near Birmingham.

Class 13.—BARBES.—1684 First prize, Charles Richard Titterton, Snow Hill, Birmingham. 1686 Second prize, S. T. Baker, Manor House, King's Road, Chelsea, London. Highly Commended.—1678 W. H. Simpson, Islington, Birmingham.

Class 14.—RUNTS.—1694 First prize, Mrs Edward Simons, Speedwell Road, Birmingham. 1688 Second prize, Thomas Beetonson, 7, New Bridge Street, Birmingham. Commended.—1691 Thomas Beetonson, 7, New Bridge Street, Birmingham.

Class 15.—DAGOONS.—1699 First prize, Samuel Ridley, jun., Clayton, Sussex. 1698 Second prize, Samuel Ridley, jun., Clayton, Sussex. Highly Commended.—1701 W. S. Colmore, Esq., Monkspath Hall, Warwickshire (Cross from Carrier; Grizzled).

Class 16.—ANY OTHER NEW OR DISTINCT VARIETY.—1702 First prize, Mrs Edward Simons, Speedwell Road, Birmingham (White Silk Laced). 1710 Second prize, Charles Richard Titterton, Snow Hill, Birmingham (Porcelain). Highly Commended.—1709 Samuel Ridley, jun., Clayton, Sussex (Antwerp Flying).

COTTAGERS' POULTRY.

1745 First prize, John Palmer, John Street, Balsall Heath, near Birmingham (White Aylesbury Ducks). 1730 Second prize, William Raybold, Droitwich (Polish Fowl, Spangled). 1732 Third prize, John Palmer, John Street, Balsall Heath, Birmingham (Cochin-China, Cinnamon and Buff). Commended.—1736 George Belton, Queen's Cross, Dudley, Worcestershire (Cochin-China, White). 1740 Benjamin James, St. Andrew's Street, Norwich (Bantams, Gold-laced). 1743 Ellen Sansom, Mrs. Tudor's Lodge, Weston, near Bath (Bantams, White).

POULTRY EXHIBITION AT CHIPPENHAM, WILTS.

THIS was an exceedingly well-conducted and interesting meeting; and was, for cleanliness, light, and ventilation, not to be surpassed. It appears, however, to be the first exhibition of the kind yet held in Chippenham, and, therefore (as is under such circumstances generally the case), many excellent pens of fowls lost opportunity of prize-taking from improper selection. Still, as a whole, it proved a most important addition to the Agricultural Association; and also that the attractions of the Poultry department fail not to add to the funds of the Society, from the increased numbers of visitors. There are but very few towns provided with so suitable a location as is presented by the Cheese Market at Chippenham, for the holding of a Poultry exhibition, as it not only offers perfect protection from sudden storms (both to visitors and poultry), but also a general and equalised light to every competing pen. These are very important advantages, and under the energetic management of the present committee, we do not ourselves doubt, in future years, this show will attain very considerable popularity. Among the *Cochins*, we have rarely seen so beautiful a male bird as the one in the first-prize-pen. It is stated to be bred from the one called "Sir

Robert," the property of Lord Ducie; the colour a deep, clear lemon, and the conformation all that the most fastidious amateur could desire; a pen of chicken from this bird were also successful in securing an extra premium. Many of the *Dorkings* were very good; but the inattention to regularity in the combs of the fowls (constituting each individual pen) was universal. The *Spanish* were indifferent; the *Game* fowls most excellent; many of the Black-breasted Reds were deservedly successful; there were also some good Duckwings, and Worcester Piles. The *Hamburghs* were not at all good specimens, and, therefore, many of the premiums were withheld. The *Silver Polands* were a good class, but losing their markings from inattentive breeding. The White and also the Black *Bantams* were of very high character, and were the objects of much admiration among the visitors; but the Sebrights were defective. In the "general class" we noticed some superior *Malays*, and also a good pen of Pheasant-coloured *Dorkings*. In the *Turkeys*, nothing of extraordinary character was to be found among the rival pens; the first prize-pen of *Geese* were, contrariwise, very good. As is usual at the bulk of our principal exhibitions, the *Aylesbury Ducks* were decidedly superior to the *Rouens*. In the *Extra Stock*, a pen of White Bantam chicken were most beautiful specimens of this fancy variety, and their especial merits procured them an extra prize. We cannot conclude our remarks on this very successful first attempt, without again alluding to the vital importance of carefully *matching* birds for exhibition; indeed, not a few instances could be adduced, in which inattention to this particular sadly injured the prospects of their owners; and, no doubt, future meetings will show that our present hint has not been unconsidered by those who may then enter into competition.

Mr. Edward Hewitt, of Sparkbrook, Birmingham, officiated as judge of the poultry.

Class 1.—COCHINS (Any variety).—First prize, Joseph Nield, Esq., M.P., for Chippenham. Second prize, Mr. Thos. Lyne, Malmesbury.

Class 2.—DORKINGS.—Second prize, Mr. Henry Blandford, Sandridge. Commended.—Mr. Edward Little, Chippenham. Joseph Nield, Esq., M.P. (First prize withheld.)

Class 3.—SPANISH.—First prize, Mr. Edward Dowden, Bath. Second prize, Mr. Thomas Lyne, Malmesbury.

Class 4.—GAME FOWLS.—First prize, Mr. T. J. Fox, Devizes. Second prize, Mr. T. Saunders, Lavington. Commended.—Mr. T. Lynes, Malmesbury. Mr. G. Botham, Slough.

Class 5.—GOLDEN-SPANGLED HAMBURGS.—First prize, Rev. C. F. Downes. (The second prize not competed for.)

Class 6.—GOLDEN-PENCILLEN HAMBURGS.—Second prize, Mr. C. Botham, Slough. (First prize withheld.)

Class 7.—SILVER-SPANGLED HAMBURGS.—First prize, Rev. C. Downes. (Second prize withheld.)

Class 8.—SILVER-PENCILLEN HAMBURGS.—Second prize, Mr. G. Botham, Slough. (First prize withheld.)

Class 9.—GOLDEN-SPANGLED POLANDS.—Second prize, J. T. Fox Esq., Devizes. (First prize withheld.)

Class 10.—SILVER-SPANGLED POLANDS.—First prize, Mr. W. Higgins, Chippenham. Second prize, Mr. E. Dowding, Bath. Commended.—Mr. B. Vick, Chippenham.

Class 11.—GOLDEN-LACED BANTAMS.—First prize, Rev. P. Methuen, All Cannings. (Second prize withheld.)

Class 12.—SILVER-LACED BANTAMS.—First prize, Rev. P. Methuen, All Cannings. (Second prize, no competition.)

Class 13.—BLACK BANTAMS.—First prize, Mr. J. T. Fox, Devizes. Second prize, Rev. P. Methuen, All Cannings.

Class 14.—WHITE BANTAMS.—First prize, Rev. P. Methuen, All Cannings. Second prize, Mr. A. Smith, Melcham.

Class 15.—GENERAL CLASS.—First equal prize, Mr. Thomas Lynes, Malmesbury. (Malays.) First equal prize, Mrs. Grimwood, Highworth. (Ptarmigan.) Second prize, Mr. T. Dark, Broughton. (Pheasant-coloured Dorkings.) Commended.—Mr. R. Dowding, Bath. Mrs. Grimwood, Highworth. Rev. C. R. Audrey.

Class 16.—COCHINS.—Chicken of 1854.—First prize, Mr. E. Dowding, Bath.

Class 16.—DORKINGS.—Chicken of 1854.—Prize, Mr. J. T. Fox, Devizes. Commended.—Mr. Edward Little, Chippenham. Joseph Nield, Esq., M.P.

Class 16.—SPANISH.—Chicken of 1854.—Prize, Mr. J. T. Fox, Devizes.

Class 16.—GAME.—Chicken of 1854.—Prize, Mr. J. T. Fox, Devizes.

Class 17.—TURKEYS.—First prize, Mr. T. Brown, jun., Avebury. Second prize, Mr. T. Dark, Broughton. Commended.—Mr. Wheeler, Laycock. Rev. G. A. Goddard, Clifft Pypard.

Class 18.—GESE.—First prize, Mr. W. Sparkman. Second prize, Mr. W. Brown. Commended.—Mr. H. Rivers, Swindon.

Class 19.—AYLESBURY DUCKS.—First prize, Mr. T. Dark, Broughton. Second prize, Mr. W. Pearce, Langley. Highly Commended.—Mr. C. T. Downes. Commended.—Mr. E. Dowding, Bath. (A meritorious Class.)

Class 20.—ROVEN, OR LINCOLN DUCKS.—Second prize, Mr. W. Pearce, Langley. (First prize withheld.)

EXTRA STOCK.—Prize, Joseph Nield, Esq., M.P. (A pen of six Buff Cochins.) Prize, Rev. P. Methuen, All Cannings. (A pen of six White Bantam Chickens.)

GRAPE-VINE PLANTING.

BEING about to erect three Vineries, and knowing your kindness in giving assistance, I beg to lay my views before your readers, so that if any one will be kind enough to give me any practical hint, I shall feel truly grateful for such. In the first place, in my early house, the border will be inside; the house will take eight vines, viz., four Hamburgs, two Joslin's St. Albans, and two Sweetwater; these I want ripe in March. My second house will take ten,—five Hamburgs, two Cannon Hall Muscat, two Muscat of Alexandria, one White Frontignan; these I want for August, September, and October. My third house I shall want to hang as late as possible. This house will take ten,—four Barbarossa, two West's St. Peter's, four Muscat of Alexandria. Do you think this selection will ensure Grapes eleven months out of twelve? or do you think I could make a better selection?

My borders I shall make as follows. I shall take the soil out ten inches below the surrounding ground, and make a concrete bottom, with a slight fall from back to front (so as to be impenetrable to the roots of the Vine), laying on four inches of drainage; then run a drain along the front, which will, I think, make the drainage complete; then lay on two feet six inches of strong loam that has been worked up with rotten dung for two years, to within a short distance of the young Vine, where I shall put fibry loam and leaf-soil; as I think they will emit roots more freely, which is an object of importance. As Grape-growing is at present engaging much attention, perhaps this may be of interest to your readers, and of great importance to me.—P. MARIOT, *Tring*.

[We have to apologize for this not appearing sooner, owing to its having been mislaid.]

THE GRESFORD YEW.

SEEING a notice of some remarkable trees in THE COTTAGE GARDENER, it strikes me that some mention of those at Gresford may be acceptable to you.

Gresford is situated between Wrexham and Chester, and is remarkable for its beautiful church. There are nineteen Yew trees in the church-yard, all of them fine trees; but one at the south-east corner is that which I would bring to your notice. I measured it at four feet from the ground, and found it twenty-six feet in circumference; but on referring to "Haden's Dictionary of Dates," I find the following account:

"A Yew is now growing in the church-yard at Gresford, North Wales, whose circumference is nine yards nine inches. This is the largest and oldest Yew tree in the British dominions; but it is affirmed, on traditionary evidence, that there are some of these trees in England older than the introduction of Christianity."

The trunk separates about five feet from the ground, into six or eight enormous branches, each of which would be a magnificent tree.

There is, also, near the church, a fine Sycamore, at the foot of which Queen Margaret is said to have rested after one of the defeats of King Henry VI. There are the remains of a cross under this tree. The name of Gresford is derived from Croes-ford, viz., the road of the cross.

The church was built in the reign of Henry VII., and the peal of bells is one of the wonders of North Wales.—M. E. G.

[We shall gladly insert the description of any fine trees, if accompanied by recent measurements of their size. Traditions, local or historical, connected with such trees, will render the communication additionally interesting.]

QUERIES AND ANSWERS.

GARDENING.

PROPAGATING CINERARIA MARITIMA.

"I should be much obliged if you could tell me how and when to propagate the *Cineraria maritima* with certainty, as I have tried it in different ways, during the autumn, with very little success. I have preserved my old plants, and wish to propagate extensively.—H. H."

[The reason why your cuttings of the "frosted silver plant" did not strike, was, that you took them from the flowering wood, or shoots in which the flowers were formed inside, but not yet visible. Cuttings of some other plants fail from this cause; therefore, to get rid of this bother, most gardeners put them off till the spring, when the shoots are young and easy to root in a hotbed; and if there are not enough for all the cuttings they want, they put such plants into heat in January, to force them into new shoots. Another thing these knowing gardeners are fond of doing, is to take very short cuttings, so as to make the most of their stock; and the very first lot of cuttings are not potted off, or taken from the bed as soon as they are rooted, but are allowed to grow on till their tops are long enough for more cuttings. There is no end to this kind of forcing, till one has enough and to spare.]

FORCING SEA-KALE.

"I have long tried to force Sea-kale out-of-doors, so as to obtain it early; but, considering the number of years I have tried, it is extraordinary that I could never succeed. I will give you an outline of the system I adopt. In August, I cut the old roots and replant in number three-sized pots, so as a kale-pot will cover them. In the autumn, when they fade, I clear the old leaves away, and put the kale pots over them. I then put a quantity of hot manure round the pots, and keep them free from vermin; but I always find that they draw weakly and come late. If you will, therefore, instruct me in the culture of the above, you would confer a great favour on—E. IAN."

[Most probably you do not supply the Sea kale in the pots with liquid-manure, and other good culture in the summer, to enable the plants to store up their sap, from which they will make strong growth when forced. We recommend you not to grow in pots at all, but turn the plants out into a bed, three feet apart each way; give them plenty of manure, liquid and solid; and, after a good summer's growth, in November, or early in December, clear away all the leaves and weeds, and give a good dusting with slacked lime. Fork up the beds carefully, and top-dress them. Those who wish for early cuttings may now cover up a small quantity, say twenty or thirty plants. First examine the crowns with the hand, and find out their extent, so as to know where to place the pots over them; then give the ground about them a thorough good dusting with quick-lime, and put the pot over immediately, seeing that it fits close at the bottom, so that the steam cannot get in from the fermenting materials which are to cover the pots. Stable-dung that has been turned over three or four times to sweeten, may be used for this purpose, but leaves are very much better; and a good manager has always a corner where he collects all his leaves for this and other purposes. Give the pots a good covering of these leaves to the thickness of a foot or eighteen inches all round, and over them, pressing the leaves as close and as snug as can be done, leaving the work in a ridge-shaped form; after which, a few barrowfuls of long stable dung, or old thatch, or any other such material, may be put over the whole, which will tend to warmth, and prevent the wind from blowing the leaves away; altogether, this should give a temperature of about 55°. A fine day should always be chosen for this work, and never leave off the job until it is finished.]

PLANTING AND FORCING POTATOES.

"Please inform me, if it will do to plant "the Fluke" now; and what some call, the "White-blossomed Kidney Potato?" It is, I think, rather earlier than the "Ash-leaved." Also, state how deep they should be planted; and what distance, or room they require? My reason for thus writing is, that I have spare ground ready for planting. Will straw

hurdles do to keep out the frost from Potatoes, forced in a hotbed? and will it do to sow Radishes on the top of them?—R. S."

[You may plant "Flukes," or any other kind of Potatoes, any time in autumn or winter, after the end of October, if the weather is open, and the ground neither frozen, nor covered with snow. Plant whole, middle-sized Potatoes—that is, Potatoes weighing from two, to two-and-a-half ounces,—and plant them by the dibble, eight inches deep. Planting at this season is not advisable if the soil is heavy, nor if the seed has to be covered by means of the plough. The moisture in the heavy soil, and the imperfect covering given by the plough, are liable to permit the entrance of frost to the sets. Plant your Potatoes in rows, two feet apart, and fifteen inches apart in the rows. Straw hurdles, well-projecting all round the frames, will sufficiently exclude frost from Potatoes forcing within side. Radishes will not do sown among forcing Potatoes; the latter overshadow them.]

TRUFFLE CULTURE—FISH IN STEWS—FATTING POULTRY.

"I am very desirous of being informed if the cultivation of the *truffle* has ever been attempted, and with what success. Perhaps some of your correspondents will be able to give this information, if you will be so obliging as to mention the subject in the pages of THE COTTAGE GARDENER. May I also call your attention to a subject on which I have little doubt some of your correspondents could give valuable hints. I allude to the management of *fish in stews* for the supply of the table. I believe it is generally considered that the fresh-water fish might form a more important part of our diet than they do at present, if attention were directed to their management; but, at all events, they are most acceptable additions to the delicacies of the table in country mansions; and as the superintendence of the fish-pond, or stew, frequently devolves upon the gardener, or his assistants, I think some notice of the subject might not be out of place in your journal. My third and last query relates to the *fattening of chicken* for the table. There is a method pursued at Brighton, by which the chicken are quickly and effectually fattened, without sacrificing the delicacy of the flesh, as is too often the case elsewhere. Perhaps some of your readers could communicate the recipe.—A SUBSCRIBER."

[We shall be obliged by any one furnishing us with information to these queries.]

TO CORRESPONDENTS.

FORCING RHUBARB (G. R.).—You do not say whether you can have any heat from the engine boiler; if you can have a flow and return pipe from that boiler, that would give you enough heat. The place, five yards by four yards, would be a famous place for forcing both Rhubarb and Sea-kale, as well as Mushrooms. It would only require to have a close-boarded roof over it to exclude all light. We cannot give advice without full information of what you intend. Situated as you are, you should buy *The Cottage Gardeners' Dictionary*.

FLOWER-GARDEN PLAN (C. M. Partridge).—We never furnish plans. It is impossible to do so with any probable success unless we knew the place.

IMPOVERISHED SOIL (A Northumbrian).—If you will tell us the nature of your soil and subsoil—whether light or heavy—we shall have great pleasure in answering your queries.

NAME OF PLANT (J. C.).—We received your specimen. It is, we think, *Lycopodium rupestre*. It is certainly a Lycopodium, and not a Fern.

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In Boxes of 100 feet.		In Boxes of 100 feet.	
Under 6 by 4 ..	£0 12s 6d	8s 6d	
6 by 4, and 6½ by 4½ ..	0 13 0	12 6	
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Larger Sizes, not exceeding 40 inches long.

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Packed in boxes of 50 feet each.

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Inches.	100 feet.	Inches.	100 ft.	Inches.	100 ft.
6 by 4	10½ by 8½	15 by 10			
6 " 4½	11 " 9	15½ " 10½			
6½ " 4½	11½ " 9½	16 " 10			
6 " 5	12 " 9	16½ " 10½			
7 " 5½	12½ " 9½	17 " 10			
7½ " 5½	12 " 10	17½ " 10½			
8 " 6	12½ " 10½	18 " 11			
8½ " 6½	13 " 10	18½ " 11½			
9 " 7	13½ " 10½				
9½ " 7½	14 " 10				
10 " 8	14½ " 10½				

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Plate, Sheet, Crown, and Ornamental Window Glass; Crystal Glass Shades for Ornaments.

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(Same side as Eastern Counties' Railway.)

WEEKLY CALENDAR.

D M	D W	DEC. 26, 1854—JAN. 1, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
26	TU	ST. STEPHEN.	30.128—30.073	36—19	S.E.	—	8 a 8	54 a 3	morn.	3	0 48	360
27	W	ST. JOHN EVANGELIST.	29.972—29.873	35—22	N.	—	8	54	0 29	8	1 18	361
28	TH	INNOCENTS.	30.083—29.902	34—28	N.	—	9	55	1 47	9	1 48	362
29	F	Nitidula grisea.	30.291—30.161	32—15	N.E.	—	9	56	3 4	10	2 17	363
30	S	Yellow-line Quaker Moth.	29.670—29.550	37—22	W.	01	9	57	4 20	11	2 46	364
31	SUN	1 SUNDAY AFTER CHRISTMAS.	29.679—29.501	33—19	N.W.	—	9	58	5 34	12	3 15	365
1	M	Circumcision.	29.427—29.378	32—17	S.W.	—	10	1V	6 m 45	13	3 44	1

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 43.2°, and 32°, respectively. The greatest heat, 57°, occurred on the 26th, in 1827; and the lowest cold, 14°, on 26th, in 1830. During the period 123 days were fine, and on 66 rain fell.

NEXT of the plants of Scripture, following the alphabetical order, come the BITTER HERBS of our translation. In the original Hebrew the word is *Mururim*, meaning, literally, *bitters*, or *bitter things*. It occurs but in two books of the Bible, *Exodus* xii. 8, and *Numbers* ix. 11.

We entirely agree with Dr. Geddes in thinking that the bitter thing eaten with the Paschal lamb and unleavened bread at the Passover was the Succory, Wild Endive, or, as some writers call it, the Wild Lettuce, *Cichorium intybus*. We so conclude, because we think as did Dr. Geddes, that the Jews of Alexandria who translated the Pentateuch, must have known what was usual to eat with the Paschal lamb, and they translate *Mururim* by the Greek words *ἐπι πικριδων*, which is the Grecian plural of the name for that plant. Jerom and Pseudo-Jonathan, two very early authorities, also agree that the Wild Lettuce was so employed.

In confirmation of the opinion that the Succory was intended, we find that Mr. P. Forskal observed, that “the Jews in Sana and in Egypt, eat Lettuce with the Paschal lamb,” and in England the usual Easter dinner is the same.

We seem to discern a corrupted connection between these constituents of the Paschal festival and the propitiatory charm of the heathen magicians, who directed those who sought to attain a wished-for object to anoint themselves with a mixture of oil and the juice of the Succory.

This bitter plant was well known to the early Greeks, and their name for it, *Pieris*, refers to its characteristic taste. It is mentioned both by Dioscorides and Suidas, who seem to have agreed with the later opinion of Pliny, who describes the *Pieris* as “the worst of the genus (Lettuce), and called *Pieris* in condemnation of its bitterness.” (*Nat. Hist.* xix. 8.) In those days, no better report was made of its virtues than that it effectually cured warts (*Ibid.* xxii. 22.); but in later times it had a higher and more correct character as a stomachic, and as a disperser of eruptions. Perhaps one of the best accidental recipes in any of the old herbalists, for they had no correct chemical knowledge to guide them, is that in “*Lyte’s Herbal*,” published in 1578, where he says, “The juice of the leaves of Succory, with Ceruse and vinegar, is good for all tumours, impostumes and inflammations which require cooling.” The ceruse, or white oxide of lead, and the vinegar, acetic acid, formed that Goulard’s Extract, or acetate of lead, so commonly prescribed now for a similar

purpose. Succory roots, in Germany, have, for more than a century, been used with Coffee, which it is said to improve both in flavour and healthfulness, and for such purpose it is now recognised by our legislature, and extensively cultivated.

Our necessary limits, in respect of both space and time, prevented a reference, in the report of the great Birmingham Exhibition, which appeared in our columns of last week, to many subjects that would interest both the Poultry exhibitor and breeder.

In regard to the first-named individual, an opinion seems to be daily gaining ground, that the two rules which enforce the statement of the age of chicken, and require absolute ownership for the two months previous to the day of exhibition, might be wisely dispensed with. The policy of these regulations, could they be practically carried out, is not questioned, for they are clearly of a most desirable tendency. But are they really and truly acted on? There are too many instances where the assertion as to the age is, we fear, wilfully and designedly falsely given; and there are others, also, where it is unintentionally in error. So common are the palpable self-evident contradictions that arise from these sources, that judicial investigation, we well know, places little if any trust on statements of this description. If the object of the rule fail of being effected, it necessarily follows that an act of injustice is perpetrated towards truthful exhibitors and the public generally. The regulation is continually evaded, and until a course is adopted, by which discovery of false representations may be of far easier attainment than at present, we would advise the limitation of this enquiry to the simple fact, of whether the birds in question are “*above or under one year old*.”

At Christmas, the signs by which an early chicken of the year and one hatched late the preceding autumn may be distinguished are frequently difficult to recognise. And still more arduous is the task of the Judge on this point when the January shows claim his attention. One of the most uncertain points in the Poultry Show is now before us, and which was lately sufficiently manifest in some of the pens in Bingley Hall. Feather, form, and condition, may be reduced readily to a standard, which, although yet imperfect, is generally sufficient for

the arbitrators; but when we come to the signs which would bear evidence on the age of a bird, whether hatched in the previous December or January, when it comes before us at the following Christmas we have little from which confidence in the verdict may be gained. Early forcing, again, adds to this uncertainty, already sufficiently puzzling, when Fowls are brought up on what may be termed an ordinary farm-yard-system. The Dorking, perhaps, is the bird most subject to this influence; for we have noticed specimens, undoubtedly hatched within the year, that exhibited every sign, both in their general figure and particular points, such as the head, leg, and spur, of being considerably older. Such early maturity may, indeed, be profitable for the table; but we apprehend a grave error has frequently been committed in the selection of such birds for breeding purposes.

In the classes for prizes at Birmingham this difficulty as to age has been experienced in former years, and a special referee for that purpose has been found a necessary official. We believe, indeed, that the Judge's duties were no sinecure on the recent occasion, and that his disqualifications were pronounced where intentional misrepresentation cannot be thought possible.

The other rule, which would be more honoured in the breach than the observance, because ineffectual to obviate the evil it is aimed against, is that of requiring an absolute ownership of two months previous to the day of exhibition. That this regulation also fails to check those who desire to take unfair steps for success, to the prejudice of the breeder and correct purchaser, is matter of notoriety. Fictitious sales—and such a sale may be even where money passes, and without any security for the subsequent result—should not be tolerated; but they are here actually encouraged. In this instance, an endeavour is often made to palliate a disingenuous negotiation; in others, however, positive falsehood is too commonly resorted to.

In the strong expression of our opinion on this point, the good designed by the rules in question is as fully recognised by us as by any of those who are the most strenuous advocates for their retention on the prize-list. Nor would we thus intimate that wilful mistatements of this character are in any large proportion to the cases where strict accuracy, according to the best of the owner's belief, has been observed. But, whatever can be shown to be prejudicial to the upright and conscientious exhibitor, when brought into competition with one who is actuated by other motives, both requires, and should receive, the most serious consideration of those on whom may devolve the arrangement of such details.

"Where should the *Andalusian fowls* appear in the Exhibition-room?" was a question addressed to us in Bingley Hall last week, and the correct answer to this would certainly call in question the present arrangement. The class in which these birds are now shown is that for "any other distinct variety;" since, therefore, the utmost that can be said for the Andalusian bird is, that it is a sub-variety of Spanish, they should be arranged either with their black cousins, or the general heading

"Spanish," should be sub-divided into sections for "black," "blue," and "white."

The *Cottagers' poultry* were too quickly passed over in our report. Three prizes only being allotted to this class, Ducks, Fowls, and Bantams were all competitors together. To the first-named, a remarkably good pen of young Aylesbury Ducks, was assigned the post of honour. Some promising *Silver Polish chicken* came second; and a pen of *Shanghaes* third. These last are, in many respects, eminently qualified for a cottagers fowl. Their quiet, contented habits, and their meritorious laying properties, at a season when eggs are sure to command a good price, are points strongly in their favour, and which, now that prices have placed them within the reach of all, are evidently influencing many who are thus circumstanced.

The *Shanghaes*, indeed, were a very remarkable feature in the Birmingham Exhibition of 1854. A general retrograde movement had previously shewn itself, not merely as to the current market value, but, also, in the actual quality of the birds. Reaction is always a most critical period; and the sudden fall from what we have always considered a most undue estimate, was a necessary consequence of this false position. But to recover lost ground, and to regain the position to which they were justly entitled, although beneath that to which the "mania" had unwisely exalted them, testifies no less to the real intrinsic merits of the race, than to the skill and perseverance of their breeders.

One of our most eminent Poultry judges observed, that on the recent occasion, if any classes were to be considered weaker than the other, *Hamburghs* and *Malay* would be those thus called in question. Assenting fully to this criticism, it may still be worth our attention to consider the causes that might be expected to lead to such a result, for it may commonly be supposed, in the case of the former, that fowls so widely distributed, and with what fanciers of every degree have been so long engaged, would not be open to this censure. Our plea for the *Hamburghs* amounts to this, that to a degree beyond what is expected in other Poultry, Bantams alone excepted, these fowls are tested by the strictest rules of feather, and their excellence demands the union of many numerous points of merit. We, consequently, believe that it would be difficult to name any other breed where it would require a larger stock from which to select the members of a first-rate pen. One feature especially, the white ear-lobe, frequently sets at defiance the efforts of the most careful breeders; and yet, without this, no *Hamburgh* can be deemed perfect. Feather, too, must be precise to a degree usually uncalled for elsewhere; and as the best birds are always disposed to run out, the selection of breeding-stock is a matter that necessitates a long period of previous accurate observation.

With *Malays*, again, the production of first-rate specimens is daily of more rare occurrence. But, remembering that these fowls cannot retain the position formerly awarded them in public estimation, either, as we think, in regard of appearance, or their economical

properties, this is scarcely to be wondered at. Their breeder has little encouragement, however strongly his own opinions may run in favour of this ungainly race. Their numbers, consequently, are few, and the time is not yet come that a high degree of general excellence can be safely predicted of a fowl thus circumstanced. Tho Malay breeder, we apprehend, has the current of public opinion running adverse to his favourites, and strong exertions must be had recourse to, even to stem the tide, even if their course be not already downwards.

One word in respect of *Geese*, for which we have long asked separate classes in respect of colour. If white, mottled, and grey be thought too much, at any rate, the two former might be ranked together, while the latter formed a distinct division. Our reasons for requiring the latter would especially refer to the fact, that the prizes for these valuable birds are, very properly, decided mainly by weight; and to attain this, cross-bred birds, between the Toulouse and other breeds, are found most useful. Now, continued exclusion from the prize-list must, generally, depreciate the character of any bird; and the Toulouse Goose, in respect of these considerations, size and weight, is seldom able to occupy a high position when the competition happens to be severe. It remains, therefore, often unnoticed, and the great bulk of breeders, very properly influenced by the result of such an exhibition as Birmingham, are thus induced to discard the variety without enquiring as to the reasons that have acted unfavourably on the bird, and in forgetfulness of its many other good qualities that might be fairly regarded as at least partial equivalents. Some of the heaviest Geese we know of have been produced from a Toulouse parent on one side; and in analogy to what is experienced with respect to other fowls and animals, a return to the original strain will be, sooner or later, requisite to maintain the excellence thus originally obtained. On this ground alone we should argue for all encouragement to the Toulouse race, such as it is not likely to receive while distanced in mere bulk by its own illegitimate offspring. Besides which, their extreme prolificacy in regard of eggs—thirty-five to forty, and even upwards, being constantly the produce of a single season—should tell somewhat in their favour. They are also remarkably handsome birds, both in plumage and form, and do not appear to disadvantage even among aquatic birds of a strictly ornamental character; while their figure is eminently qualified to fulfil all the requirements of the kitchen, for which they fat rapidly. Whatever other grey Geese may find admission, let us at least hope that another season may find our Toulouse protégés in a class for grey Geese, distinct from the white and mottled birds.

Bantams must have a place in our reminiscences of Bingley Hall; but space is now wanting for these, as for some other matters in connection with its last exhibition.

We cannot, however, conclude these discursive observations without again impressing on Poultry-keepers of every degree, whether exhibitors or not, the debt of obligation under which they labour with respect to the

Society whose exertions, now continued for several years, have so successfully fixed public attention on the different members of the Poultry-yard. One great national exhibition, such as may now be safely anticipated at Birmingham, has, we believe, more real influence in furthering the Poultry movement, and in carrying out the views of those who support it on the disinterested grounds of its being a branch of agricultural economy, hitherto most miserably disregarded, than all the minor shows collectively. We do not say that this one arena should alone suffice for the competition of the Poultry-keepers of England: far from it, indeed; but we certainly are strongly impressed with the belief, that its leading character is a most valuable feature, and that the limited number of provincial societies that may be elsewhere called for, will do well to reorganize it as their Metropolitan guide.

GARDEN GLASSES.—CLOCHES.

SOME time since, I endeavoured to call attention to this subject, hoping to set other minds at work; but I am not aware that any one has since attempted to throw further light on the matter. Is it because it is understood that no advance is possible; or, is it mere apathy? If hand-glasses, or cloches, have arrived at a stand-still-perfection, I verily believe that they occupy the proudest position of any gardening instrument.

We all know what a stir was made, a few years since, about the cloche of our spirited neighbours the French; and many grey-headed practicals know, also, that they were neither more nor less than the old "bell-glass" of some fifty or sixty years since; at least, there is no difference in principle; but there is, it would appear, a difference in the application of them to practical purposes; for the French, we have been told, use them, to this day, extensively in the culture of winter salads, especially Lettuces; and carry the matter so far as to be in a position, as we are told, to export many valuable things in this way to the British metropolis,—besides supplying an enormous home consumption.

Now, I believe the French cloche is not particularly clear; and here is a point to be noticed in the question. When we come to consider the dullness of the atmosphere in England, as compared with that of France, we may fairly imagine that the character of glass that is well-adapted for France is not obliged to be equally well-adapted for England. These things, surely, will be admitted as fair argument; and then it follows, that if the French gardeners are successful in the way of their cloches, why may not John Bull try his hand once more this way? These things taken into consideration, is it not probable that the venerable bell-glasses of nearly a century ago may have fallen into disuse merely through inaptitude for our dull climate?

These bell-glasses were very green, and as thick as a tile; they were counted old-fashioned things fifty years since, and, somehow, considered too Frenchified for Englishmen. Happily, these ignorant antipathies, the offspring of certain peculiar positions, no longer exist. Sir J. Paxton assisted in dealing out their death-blow when he planned the celebrated Crystal Palace in Hyde Park. However, they did not come into every-day competition with the ordinary hand-glass, even in those days; albeit the latter was not by any means a very philosophical affair. Such, in the main, were composed of numerous small panes of glass—scarcely fit to glaze a shed-window in these times—imbedded in lead; and, like spinning-wheels, they are not yet entirely lost sight of.

A season rolled on, or rather flew, in those days, with me; for, to steal an idea from a popular song:—

"I remember, I remember,
How my childhood fled by."

As seasons returned, we used to rummage out all our glasses in the early summer for general propagating purposes; and I can well remember the prejudice then against those green, bull's-eyed, thick-headed things, which, doubtless, ought to have been called "cloches." Had such been the case, I am not assured that they would not have assumed a priority as to use.

Well, to pass over these small matters, it was not long before our "Brummagem" men, and others, began to dream of innovation. Metallic frames were produced, and from that moment, although the men who produced the earliest metallic frames were, as our friend, Mr. Beaton, cutely observes, "great sinners," yet, from that moment, I say, the old, unbearable, unmanageable, uneconomical "lead laps," received a mortal wound. Of course, we had more forms than one of these glasses; but the earliest, if I mistake not, had fixed tops,—in other words, were in one piece. Before a long period passed, we had moveable tops. This was a step in advance; the first idea, and, indeed, the only one hitherto developed, as far as I am aware of, for affording ventilation without lifting up the whole glass; a practice quite at variance with common sense and economy, to say nothing of trouble. To pass on; since a hand-glass, or cloche, or striking-glass, or what you will, is but an epitome of a glass-house; what would be thought of houses to be ventilated at the base of the roof-angle only? In houses, of all forms, whether lean-toos, spans, or ridge and-furrow, we hear constantly of ventilation, or, rather, escape, at the highest level; which, indeed, through the accumulation of heat, becomes a complete reservoir.

Now, how is it that we cannot apply this principle to the hand-glass, the "striking" glass, the cloche? But let us see if there be any other faults in the glasses of the day, of which we may justly complain. I take it for granted, that the following might be considered maxims in the construction of a good glass:—

1st. That it be clear.

2nd. That ventilation, or air-giving, be provided for, in accordance with the needs of vegetation.

3rd. That the ventilation be performed with great facility, without moving the glass, and that it be capable of graduation.

4th. That the glass be not heavy.

Now, if these be points by which to test the glasses at present in use, I much fear few will stand before them.

The present glasses, in the main, as before observed, give air, or, rather, admit chilling winds at a most inconvenient point for the needs of many things; for, whether it be Cauliflowers, Cucumbers, or a batch of cuttings, which have hitherto been kept closed, the problem surely is, how to let heat or vapour out, without letting wind in; as to propping up with brickbats, nothing can be more barbarous. I wonder what sum of money would be required to pay the breakages of past times in this way alone?

But to pass by the other tests, which our readers will readily apply for themselves, we should remember that a new race of gardeners has sprung into existence during the last twenty years; or if not originated, have increased to a vast extent;—I mean our lady-gardeners and amateurs.

Now, who could view, without a just indignation, a delicate and handsome young lady, seizing brickbats to prevent her pets from scorching? and who would not lament to see the change come over her interesting countenance, on beholding her half-struck cuttings, in the evening, appearing as though they had been subjected to an African harmattan? Surely, it must

be in the power of our British manufacturers to produce a glass perfect as to ventilating principles; and yet the latter so easily accomplished, as, that not only a young lady, but a mere child may, by a single touch, "give air," as gardeners term it. And as for the moveable lids of our metallic glasses, although by far less objectionable than the brickbat glasses, yet how ponderous, in general, for the class of gardeners just adverted to; besides, as before observed, it is not at this point we should prefer giving air during an intense March sunshine and wind.

It has been the custom, generally, for English glasses to be composed of many panes; but why should this be the case in these times? Why not a glass in one piece, like the French cloches? or if, indeed, it be really desirable to have plenty of panes, why not have fifty instead of a score? The fact is, much of the present hand-glass making, as to the mode of construction, &c., probably arose out of a desire to work up scraps and cuttings of glass; but, surely, now glass is so cheap, as compared with former days, it is perfectly unreasonable to suffer mere scraps to dictate the character of the glass, or in any way to bias the affair.

I hope the foregoing remarks may lead to a consideration of the subject; our readers may rest assured that invention is not at an end with regard to this question; and that it will not be long before we have a glass far better adapted to the wants of the amateur, at least. I have long been considering this subject, and, if all be well, I shall not cease until I produce a glass worthy the notice of the public. I will say more on these matters shortly.

R. ERRINGTON.

ROSES

I HAVE been reading the *Rose Amateur's Guide*, by Mr. Rivers, the last, or fifth edition, of an excellent and well-known work. The first reason I have for saying anything about this book is in my own favour; for if Mr. Rivers had not put his name to it, half the world would think I had written it myself, on purpose to save so many Rose-questions from THE COTTAGE GARDENER, and to push on my own well-known partiality for cross-breeding in disguise, also to back my notions about the value of colours. I know very well, that some of my best friends think, at times, that I go faster on some paths than my portrait in THE COTTAGE GARDENER would warrant to those who know me not; but my own opinion is, and always has been, that I never go fast enough in anything; and it seems to me, that Mr. Rivers has written this edition of his "*Rose Amateur's Guide*," on purpose to prove that an author can run the faster, the older he gets; at all events, he is far ahead of me in this edition. He fully recognizes the value of summer-pruning certain kinds of Roses, a practice which was first recommended by THE COTTAGE GARDENER. He allows that Roses on their own roots may do better on light soils than worked ones,—another step on a safe road; and in a free conversational style, he answers several questions about Roses which I asked in this work three or four years since. I allude to the best kinds of Roses, in each class, to get seeds from, and to use as cross-breeders. This is a subject on which I was, indeed, much in the dark with respect to Roses. As to the two best colours, or shades, in Roses, for producing a given flower by crossing, any body may be supposed to know as much about them as Mr. Rivers or D. Beaton; at least, most people give their opinions on the point freely enough. Sir W. Middleton has the best eye for pointing out the right parents for a cross of any one I know; but, like me, he did not know the best kinds of Roses which produced seeds freely enough to warrant a cross; else it is very likely I should have

made some trials to get new and superior Roses before I left him. Here the amateur is apt to doubt the value of such experiments under his own hand, supposing he is tempted to try his skill and patience, seeing that Mr. Rivers, with all his knowledge of Roses, has not yet been able to excel the French breeders, or that Mr. Beaton, with little or no knowledge of the right breeding Roses, had not stumbled on success by mere chance. But the fact is, that such amateurs as can command the necessary time and patience for crossing any kinds of plants, are far more likely to succeed than any of us. Business compels the nurseryman to "stick to his last," and duties have more commands for the gardener than one of them in a thousand can properly attend to as he would wish. We can only, at best, point out the right paths for others, except here and there, when one is smitten with the fancy.

I am almost sure that as fine Roses might be got from crossing here in England as in any part of the world; that by a careful selection of parents, and by genuine cross-breeding them, nine-tenths of the seedlings would be good Roses; and that most of our best Roses have been got, hitherto, by chance, both here and on the continent. When Rose-houses are as common as Orchard-houses, or when Roses and Pears are grown in pots, in the same house, and when the subject is better understood, we shall beat the whole world in seedlings, by our superior skill in growing the parents; therefore, as long as I live, I shall continue to spread, far and wide, every attempt or suggestion, either that occurs to myself, or that I may hear of from others.

Mr. Rivers has now put and pushed the subject, as far as he knows, into every section of the Rose. He is extravagant in his fancies to a degree. He would have every Rose,—Moss, Cabbage, and all, with evergreen leaves, and to bloom for six or eight months in the year; in every section he would have a dark crimson Rose to begin with,—a dark crimson, evergreen, ever-flowering, and evergrowing. He believes in the possibility of all this, and shows the way he would go about it in the "Guide." He is half-inclined to believe in super-fecundation—that is, two kinds of pollen to act simultaneously on the same stigma; and that is always a sure sign to me, that he who inclines that way, is not a *practical* hand at the business *himself*. The idea of super-fecundation must have originated from the essence, or from the fermentation of theoretical "deductions." You may bag all the Rose-pollen of June into a bladder, mix it together till July, and apply it with a brush all over the Rose season; do the same for ten years running, and if any one of the cross-seedlings turns up half Scotch, and half York and Lancaster Rose, you prove the hypothesis of super-fecundation; but certainly not by a milder proof, seeing how crosswise the different sections run into each other already.

Of these sections, there are twenty-nine treated of in the "Guide," beginning with the Cabbage Rose and on through Moss, Provence, French, and French hybrids, together with Hybrids, Chinese and Bourbon; Whites, Damasks, Scotch, and all Briars; six sections of Climbing Roses, beginning with Ayrshires, and on with Multifloras, Evergreens, Boursaults, Banksians, and Hybrid Climbing Roses. All these are included in summer Roses; but our author "sees the day," like a prophet, when every one of them will be swept from the face of the earth; in that day, Cabbage and Moss Roses will be evergreens, and all Climbers will be Perpetuals. But at present, we have only eleven sections of Perpetuals, and here they are:—Moss, Damask, Hybrid Perpetual, Bourbon, China, Tea, Miniature, Noisette, Musk, Macartney, and Microphylla. I dislike the word *miniature* very much indeed, and I shall never use it, and never did, since I heard a duchess saying, that "Fairy" was the best expressive term *they* had for Roses.

Those Autumnal and Perpetual Roses form the second part of the "Guide;" the third and last part is taken up with the treatment of Roses in all their varieties, from the seed to the "show;" or to the drawing-room; spring, summer, and autumn propagation; budding, grafting, layering, forcing; growing in pots for yourself, and for the shows and prizes; the different, and the best stocks, for such-and-such Roses; "dressings" for this and that soil and situation; where, how, and the chances of getting cross-bred Roses in all the sections, and which is which, to make them all evergreens; the climbers, pillars, and festoons—how to crimsonify all, or any of them, or to have as many crimsons in all the sections as one wants; and to know how many and what are the best at the present day. Mr. Rivers always starts with crimsons, and goes down through all the shades to white; he tells all the best of each colour, and what they are best for, and how to make them better if you should not like them as well as he does; he says there is a better than the "Giant of the Battles," Lord Raglan, perhaps; a still better than *Baronne Prevost*, a certain *Colonel de Rougemont*. According to him, the best blush in the world is *Madame Rivers*. Of course it is; who doubts it after he says it is. There is no doubt Mr. Rivers is very happy at home, and that is why he writes in that homely chatting style which we all like, whether we like him or not. He says, *Madame Laffay* was never beaten; pity she should, or any other madame who is always blooming; that *Victoria* does not open well; that may be owing to the war, but more probably to our "allies," who did not understand how to make a queen for us. He thinks her Grace the *Duchess of Norfolk* ought to be set up against a pillar, and to be changed into "a nice pillar Rose." In fact, he makes no ceremony with queens, duchesses, ladies, madames, and mademoiselles; but makes his dispositions of them just as he thinks they tell best.

Hear what he says about the best pillar Roses; "As pillar Roses, some of the vigorous-growing varieties of Hybrid Perpetuals are highly eligible; they should be treated in the same manner as recommended for summer pillar Roses. They will cover a pole about eight feet high well; but unless in very rich soils, they cannot be depended upon to form a pillar of greater height. *Baronne Prevost*, *Caroline de Sansel*, *Dr. Marx*, *Robin Hood*, *Jules Margottin*, *Madame Laffay*, *Beranger*, *Louise Peyronny*, *Baronne Hallez*, and *Madame Fremion*, are all nice varieties for this purpose." He says, that *Jules Margottin* ought to be called *Perpetual Brennus*; that its very strong habit, its large flowers, its vivid crimson, and its fine shape, "remind us much of that very fine old Hybrid China Rose, *Brennus*;" he also says of it, that it will do equally well (why not better?) on its own roots, also as a standard and for pegging down, and that it will soon be in every Rose-garden. *Sir John Franklin*, and *Gloire de la France*, are quite new and quite as fine, "if not of superior brilliancy," as *Geant des Batailles*. *Prince Leon* is the next new Hybrid perpetual Rose on which he puts the greatest stress. It is of a cherry colour. *Louise Peyronny*, a daughter of *La Reine*, is another, which answers even better than the mother queen, because it is not quite so double, it opens more freely; and the *Colonel* of the Regiment (*Rougemont*) knocks *Baronne Prevost* over the coals, and takes his boots himself; while *William Griffiths* "is, indeed, the most perfectly-shaped Rose known," the colour being a bright lilac-rose. *Souvenir de Leveson Gower*, a magnificent crimson; *Alexandrina Bachmeteff*, a brilliant carmine; and *Prince Chipetonzikoff* (who was he, and who next?), with brilliant deep red flowers, are three great favourites with him; but he thinks the best of them will yet be eclipsed by English seedlings.

Mr. Rivers says, that in two or three generations of crosses *Laffay* got most of the best Roses now in cultivation, and as we know that one of his earliest seedlings,

which his wife chose to commemorate her own name, *Madame La Fayette*, which is still classed among the best Roses, we may believe that we could get superior seedlings, if we went earnestly to work on the mass of Roses now ready at our hands. *La Quintinie* is the best dark crimson Bourbon Rose; *Scipion* and *Charles Souchet* are not far behind it, in the same colour; the *Malmaison* is the best blush, and *Acidalie* is still the best white in this section. The dark crimson Bourbons are of delicate constitution, and require high cultivation; none of them are good seeders in England; but let them be grown strong in pots in the Orchard-house, and they must seed freely. I have seen *Bouquet de Flora* full of hips and seeds in the open border, and Mr. Rivers suggests to plant *Acidalie* against a south wall, in order to make it fruitful; the south wall is his favourite place for all parent Roses for crossing.

To have a bed of "pure, pearly-white Roses," none are so good as *Clara Sylvain* and *Madame Bureau*—both Chinas,—*Clara Sylvain*, being the strongest of the two, ought to occupy the middle of the bed. *Mrs. Bosanquet* is the next best, in the next tint—a blush Rose, and, with *Napoleon* round the outside, makes a fine bed. *Cramoisis Supérieure* is the best crimson China for bed or border. The best scarlet is *L'abbé*, and *Madame Brcon* the best rose-coloured; but he mentions all the groups which may be safely planted as beds from among the Chinas, and he instances, as the best parents, *Eugene Beaulanois*, a deep crimson, and *L'abbé*, scarlet; also *Archduke Charles* and *L'abbé*; the latter, being a half-double Rose, has sufficient pollen for experiments.

All very double Roses can only be female parents; and in order to get at their stigmas, Mr. Rivers advises some of the central petals to be removed—very good advice. Petals never assist the process of the pollen, as far as I am aware of, and no harm can come of removing some of them in any flower I know. Tea Roses, "in all moist soils and situations, when grown on their own roots, must have a raised border in some warm and sheltered place;" be protected in winter, and not be fully exposed at once when the covering is removed in the spring. I have seen a good deal of harm done to many half-hardy plants by taking off the winter covering too soon in the spring, and altogether at once. The borders of the Orchard-house, he says, is the right place for Tea Roses; but, like all good gardeners, he believes that bottom-heat, in the open-air, would do as well for China Roses as for *Crimum* and other *Amaryllids*; as recommended by Mr. Herbert, many years since; and he gives directions for having them with bottom-heat full in the sun all the summer. The Tea Rose called *Canary*, he says, "abounds in pollen;" and, as Tea Roses are mostly grown in pots for conservatories, every one ought to have this pollen plant to try experiments, if only for mere amusement. He recommends *Vicomtesse Decazes* to be tried with it; but he gives the names of others, and of all, in the shy seedling groups, that are "almost sure to produce it." He mentions, as an extremely singular cross, *Rosa Hardy*, a cross between a variety of *Macartney* and *Berberifolia*, which was once believed not to be a true Rose at all; and he says this will be the parent of an entirely new group; but let us hope not, till we get rid of two-thirds of the "groups" we now possess. Surely, five groups could cover all the Roses in the world, and simplify them so that all might know which was which at first sight. D. BEATON.

WATERING PLANTS IN POTS IN WINTER.

WATERING, at all times, being an operation demanding thought and attention, requires that attention peculiarly in winter. In a hot July it is not so easy to

overdo with water, because the heat and sunshine soon evaporate the extra liquid; but in winter, too great an amount of moisture has either ruined, or rendered constitutionally weak, and subject to hosts of insects, many a valued plant. All the peculiar rules of knowing whether the soil in a pot is dry—its weight, the sharp ring when struck on the side with the knuckles, and the difficulty with which water percolates when poured gently on the surface,—should be well attended to. The great rule,—applicable to every growing plant,—water so as to reach every fibre, and then contentedly wait until the soil becomes dry enough to require fresh moistening, demands particular attention in winter. Tested by this rule, the utter impossibility of answering the question so often put, "How often shall I water such plants?" must at once be apparent. Water when the fibres are just beginning to want moisture, but not before. A constant dribbling is just the process most calculated for giving a plant, whose natural dwelling may be the dry plain, the still dryer hill-side or ridge of mountain top, all the requisite conditions that would suit one brought from a marsh or a lake. This, again, is just one reason why marsh plants often flourish so ill with us. We give them the usual routine of the garden, the greenhouse, and plant-stove; and though many become suited to the circumstances, many others will never feel at home. While, therefore, in cold weather, a plant near a heating apparatus, either in plant-stove or greenhouse, may require watering every other day—similar plants, in a cool greenhouse, in a window merely free from frost, or in a cold-pit, may require moistening once in a month or two.

Just examine, for instance, the plants in that cold frame, or pit, which the amateur is so anxious to refresh with his water-pail; and what could be more unnecessary. Try them by whatever test, and the soil is moist enough. A clear sunshine at this season does but little to exhaust the moisture in such places, it merely enables the plants to get a change of sweeter air more liberally. Unless frosty, the air will give nearly as much moisture as it will take; and though it does take away enough moisture from the surface of the pots to cause them to look a little dry, it is very likely that a dull day, or a dull, sunless week may succeed, and your plants will get as much moisture, or rather more than is good for them, from the misty atmosphere alone. No general helter-skelter waterings should ever be given in such circumstances in the winter months. Not a drop of water should be given that can be avoided. The wetter the plants are, the more subject they are to feel the effects of cold, frosty weather. The soil, by evaporation, may even get to the freezing point when the atmosphere above the pots is several degrees higher in temperature. If the weather demands that such receptacles should be closely shut up in such circumstances, and the plants should escape King Frost, how liable are they to be carried off by Mr. Damp, and his fungous-like broods. Every plant, when watering is demanded, should be carefully watered separately; and if the operator has not accustomed himself to give such as much as will suffice, without spilling a drop, or allowing any to run through the pot, he should lift each pot that wants moistening outside; water it there, and replace it only when thoroughly drained.

In a plant-stove, or warm greenhouse, according to the rules given, water will be more or less often necessary, in proportion to the artificial heat given, the state of the weather, and the amount of sunshine, and the free growing and flowering, or comparative repose of the plants. Even in winter, when the house lies well to the sun, when the previous night has been frosty, and strong fires have been used, followed by a clear sun on the following day, the evaporating of moisture will be great, and waterings must be afresh communicated.

In connection with this, it will be of importance for beginners to digest all that has been written in this work, on protecting, air-giving, and a lowering of temperature, within the bounds of safety, in preference to using strong fires when they can be avoided; because they, among other drawbacks, involve more frequent waterings than would otherwise be necessary; and these, again, in the general absence of sunlight, would tend to debilitate the constitution of the plant. Let the amount of watering, therefore, be regulated by the stimulus given to the perspiring processes. When a strong sun breaks out suddenly after dull weather, it is also often much more preferable to dust the foliage gently with water from a fine syringe, in preference to drenching the roots, when the plants show any signs of flagging. In such circumstances, it is often not the want of moisture of the roots that causes the distressed look of the plant, but its inability, after a state of sluggish inaction from dull weather, to meet at once the excitement to activity from an unclouded sunbeam. The damping of the foliage blunts the force of the sun's rays; moisture is supplied to the atmosphere from another source than perspiring through the foliage and stems of the plant, and it gradually becomes inured to the change from shade to sunshine, the relative and co-relative action between leaves and roots being again also restored. A slight shade, in such sudden changes, is also often very beneficial. In an extreme case, I have seen syringing the roof with common water outside beneficial; it just blunted the force of the beams, until the plants were prepared to right themselves. In flat-roofed houses such precautions will be little required in winter. The rays, however bright, fall at too oblique an angle to be of any inconvenience.

In cool greenhouses, where the object is more to preserve than to grow, much of the same rules may be observed as in the cold pit; only so much precaution need not be particularly and essentially insisted on, as fire heat can always be used for the driving off extra damp. To prevent, even here, any extra drying, it would be advisable to have evaporating-pans, on the heating medium, at the warmest end of the house. Health in the plants, and economy in the keeping of them, will, however, be best secured by using and spilling no water that can be avoided. Unless in very dry or frosty weather, there will generally be too much moisture, instead of too little, in the atmosphere. Plants, comparatively dry, will bear an amount of cold, uninjured, that would ruin them if wet. Let all keep this in mind, who, in these times, have to think of every bushel of coals or cinders used in keeping their favourites from frost and other injuries. Turn poet if you will, and launch out into the incomparable beauties of flowers, and dwell with rapture on the associations which even a single leaf or a withered bloom may inspire; yet, prepare yourself for the fact, that these very *loves!* and *ducks!* and *O! such beauties!* will be the very first to yield when retrenchment takes the field. Well is it that the love of the natural is so strong as to be retained when nearly all other of love is gone. The lady with sorrow resigns her flowers, when a pinch between income and expenditure comes; the poor street basket-woman endures many a privation, yet feel some solace from a plant in a broken teapot—brimful of hopes and fears to her—the almost only luxury she knows on earth.

Similar rules will apply to plants in sitting-rooms. They will want watering oftener in winter than those even in houses; because there is every chance that the atmosphere will be drier from the fire-heat necessary to keep the inmates comfortable. As light falls on the plants only on one side, they cannot be too near the glass, unless where there is danger from frost, as the great thing is to keep them healthy and slowly growing.

If, after dull weather, the sun shines powerfully, it may be necessary to place a muslin curtain for a short time in front of them, or to move them a little further from the glass. In very severe weather, anywhere about the middle of the room would be the safest place; and in extreme cases, having a counterpane, or other cover thrown over them. The drier they are, in such circumstances, if they do not suffer, the better. If the air of the room is dry, sponging the leaves will be better than drenching the roots.

In such circumstances of cold, when the plants are removed from the window, the cooler they are to be safe, the better. As little stimulus to grow as is possible should be given when they are not receiving the full benefit of light. Some of our friends remove their plants near the chimney corner in cold nights. Cold must it be, and *low* the fire, if they do not suffer from such a position. The middle of the room, where they could be covered over, would be better. Not satisfied with this comfortable, snug cover at night, some of our friends keep them in such a place for days, in cold weather; water them as they require it, and the soil soon dries, and then they marvel that they might take the shoots and twist them round their fingers. No true sturdiness and solid additions can be added to the plant, unless in light. In dull weather, even when the plant stands in the window, let waterings be moderate, and your plant will be all the hardier. Neutralise the dry air of the room by frequent sponging and syringing of the leaves. This will also remove all obstructions to the bark and leaves performing properly their allotted functions of respiration and perspiration. This cleaning of the foliage, and not too much watering at the roots, is the grand secret of window-gardening; and by attention to it, I have seen plants, outside and inside of windows in London, that would have rivalled similar plants in the open country.

All plants in a state of rest should know little of the water pail in winter. Many, such as *Fuchsias*, may be kept even in a dark place, the roots just as moist as plunging in a dampish material should supply. Many other things, such as bulbs, if placed in soil, in the medium state of being neither wet nor dry, should receive no water until the roots have freely grown. An amateur rotted a fine lot of *Hyacinths* by drenching the soil well after potting the bulbs. If he had saved himself the trouble of watering, potted his bulbs in dryish soil, and covered them over with two or three inches of earth, ashes, &c., enough of moisture would have been absorbed to encourage vegetation, and he would have had something different from disappointment for his money.

R. FISH.

FRANCISCEA CONFERTIFLORA.

THE *Francisceas* are all charming plants, producing numerous, pretty, and, when first expanded, blue flowers. Some of them are also very fragrant, especially *F. latifolia*. Beautiful though they all are, yet the most lovely is the one I have selected to write about this week. The generic name is given in honour of Dr. Francis, and the specific name (*confertiflora*) means, crowded-flowered. It is a low-branching shrub, native of Rio Janeiro, and has not been long in British gardens. Mr. Benthams names it *Brunfelsia confertiflora*. The flowers are produced in clusters at the ends of the branches. When they first expand they are of a most pleasing lilac-blue, but afterwards become clear lilac. Each flower is full as large as a shilling; and I have had as many as six expanded at once on one branch, and half-a-dozen branches full of bloom on one plant, and that plant not more than a foot high. The leaves are also rather crowded at the summit of each branch;

hence they, with the flowers, form a nosegay-like appearance. The leaves are from four to five inches long, and rather more than an inch wide in the middle, gradually narrowing each way. There is only one species, *F. macrophylla*, or, as it was first named, *hydrangeeiformis*, that produces its flowers in a similar manner, exactly at the ends of the shoots; but the latter-named species has small flowers, and very large leaves. *F. angusta, acuminata* and *Pohliana* flower in a similar manner; but they have frequently small leaves intermingled with the flowers.

F. confertiflora is a stove-plant that ought to be in every collection. It is so very beautiful when in flower, and when out of bloom forms a neat evergreen bush; and, moreover, it is not subject to the attacks of the Red Spider; is early cultivated, and not difficult to propagate; all good points to recommend a plant to cultivators.

CULTURE.—The first thing to do is to procure a plant. So readily has it been propagated, that good plants may now be purchased for three or four shillings each. The best time to obtain one is about April or May. After the plant has arrived at its future home, place it in the stove for a week or two, to recover the effects of the journey. In the meantime, prepare a compost for it of the following materials: turfy peat, vegetable-mould, and loam full of fibre—that is, grass roots not much decayed. Mix these in equal proportions, and add some small lumps of charcoal and plenty of silver-sand. Place this compost in a dry, warm shed for a week or so, to bring it into a friable, half-dry state. It is then fit for use. Then choose a pot about two inches wider than the one the plant is in. If not a clean new one, let it be thoroughly washed quite clean, both inside and out.

There has, lately, been a great deal said and written about hard-burned and soft pots, the query is, which is the best? Mr. Fleming, at Trentham, showed me many plants growing in non-porous materials, even glass, which certainly were healthy; and, it appears, from Mr. Beaton's report, that he exhibited some plants in such materials at the last Horticultural Society's Meeting in Regent Street, in perfect health. Now, if plants will grow well in glass pots, it may be easily conceived what a great improvement in appearance a stage of well grown plants in elegantly formed glass vessels would present. It has always been an object, with tasteful gardeners and amateurs, to get rid of the unsightly common garden pots, by covering them with low, bushy plants in front of them; but if glass or porcelain pots will answer to grow plants in, the glass manufacturers will soon send out elegantly formed vessels of every size; certainly, Mr. Fleming succeeds well with them, and I do not see why every careful cultivator should not succeed also; but then, every gardener can procure, at present, the common pot, and, for a time, I suppose, we must be content with what we can get, till fashion, or good sense, renders the use of glass pots common.

To return to the culture of our plant. Having chosen the pot, proceed to drain it well; cover the hole at the bottom with a large piece of broken pot, with a thin piece under one side, for the more free egress of the superfluous water; lay upon it a thin layer of smaller-sized pieces, and upon them another layer of still smaller pieces; cover the whole with some rough pieces of fibry peat, compactly laid, to prevent the fine particles of the compost from choking up the drainage; then, upon that put sufficient compost to raise up the ball level with the rim of the fresh pot; place the plant in it, and work around it the compost till the pot is full, pressing it down firmly as the pot is filling; when full, shake it down, leaving about half-an-inch for the water; when pots are too full of earth, it is almost impossible to wet the ball of earth through. This is a great mistake, and must be avoided.

Give the plant a gentle watering, and stop the branches so as to make them send out more branches, to form a bushy plant. If you have a frame or pit to spare, in which there is a mild dung heat, that is the best place to nurse young stove plants into specimens, and when so grown they are woody, and will bear a very moderate temperature afterwards. I have kept *Franciscus* through the winter in a house very little warmer than a greenhouse, and they flowered more freely afterwards, in consequence of the rest.

PROPAGATION.—Young shoots taken off in spring, put into sand, and placed in heat under a bell-glass, or even a hand-light, strike very freely, but the roots will perish, and the plants die, if left too long in the cutting-pot. It is then desirable to pot them off as soon as ever they have pushed forth roots, which may be easily known by the tops growing. After they are potted off, replace them under the hand-light, shading them for a time till fresh roots are emitted, then gradually inure them to bear the full light, and they may then be repotted, and grown on for that season, and in the spring following be repotted, and treated as the older mother plant.

T. APPLEBY.

WOODS AND FORESTS.

THE ELM.

(Continued from page 203.)

Propagation by Grafting.—The common English Elm, *Ulmus campestris*, and also the Dutch Elm, *Ulmus major*, are apt to throw up an immense quantity of suckers, and, in consequence, are too often increased by them; a practice very objectionable, especially in hedgerows. For, by planting these suckers, the proper hedge plants, such as the Thorn and the Holly, are choked and destroyed, and the hedge becomes all Elm, one of the worst hedge plants we have, it being so easily broken through by cattle. To prevent this, these suckering Elms should all be grafted on the common Wych Elm. They are very easy to graft, almost every scion being sure to take. Sometimes they produce seed, though not as freely as the broad-leaved *Ulmus montana*; but even seedlings will sucker, and, therefore, in all cases, the grafted plants are to be preferred.

The proper season for grafting is in April, just before the buds break. Choose strong, one-year-old shoots, and put the scions as near as possible upon stocks of the same diameter. Graft about six inches from the ground; tie the scions on firmly with good, smooth, garden matting; clay the graft with well-tempered clay, thoroughly mixed with cow or horse-dung; this prevents it cracking. After the grafting is finished, draw the soil between the rows of stocks up to the grafts covering the balls of clay entirely, leaving only the two uppermost buds of the scion above the soil. As during the grafting operations the soil necessarily is trodden down, I always find it necessary to stir it up with a fork (Park's five-prong fork is the best for this purpose,) previously to earthing-up the grafts. After the grafts have made some progress, and are quite safe, then level down the ridges, and carefully untie the matting. Towards the middle of the summer, go over the grafts, and prune off all the shoots, excepting one for a leader. They will then want no further care, excepting keeping the ground well hoed to destroy the weeds. In the autumn, as soon as the leaves are all fallen, the ground between the rows should be carefully dug over to admit the rains to sink into the earth to encourage the growth of the trees. In these nursery rows they may remain two years, when they will be large enough to plant out in the wood, but for hedgerows they should remain till they are seven or eight feet high, in order to be tall enough to be above

the reach of cattle. The Elm is a tree that will move safely even when ten or twelve feet high.

By Seed.—Several authors describe varieties of our native Elms. Mr. Sabine mentions one that he proposes naming the *Downton Elm*; and another author, in the agricultural survey of Durham and Northumberland, mentions one with extra good quality, which he proposes naming the *Scampston Elm*. Now, nurserymen in those neighbourhoods should (whenever these varieties produce seed) save seed from them, and propagate them largely. Indeed, every forester or planter should be constantly on the look-out for any improved varieties of timber trees, and when they are found, to make them known, and propagate them, either by seed or by grafting. For stocks, it is absolutely necessary to sow seed, and the species proper for stocks is, as I said before, the common Wych, or broad-leaved Mountain Elm. This flowers in May, and the seed is ripe about the middle of June. It should be gathered and sown immediately. Fix upon a piece of land of good quality and open texture. Let it be well dug, and, if poor, add a tolerable coating of well-decomposed manure. Fork this in, mixing it thoroughly with the soil, breaking and pulverising it well. Then set out the beds three feet wide, with one-and-a-half feet wide walks between, and with a rake draw off about half-an-inch deep of the soil. Upon the seed, sift some of the soil out of the walk, about a quarter-of-an-inch thick, returning the contents left in the sieve into the walk. Then edge off the sides of the bed, rake the walk, and the sowing is completed. Should the weather set in dry, the said beds should be watered every evening until the seeds come up and have made some progress. Should any weeds appear, let them be carefully drawn up whilst they are very young, for if allowed to become even moderately large, in pulling them up some of the seedlings are almost sure to be pulled up with them. These seedlings should remain in the bed till the second autumn after sowing, then they will be strong enough to transplant into nursery rows. If intended for grafting, plant them in rows, twenty inches apart, and eighteen inches from each other in the row. This will be ample space, even if the trees stand three, four, or more years, till they are high enough to plant in the hedges. On the other hand, if not for grafting, they may be planted in rows half-a-yard apart, and a foot in the rows.

Soil and Situation.—The *Ulmus campestris* requires a dry, deep soil, and sheltered situation; but the smooth barked Elm will do well in thinner soils and more exposed situations. I have seen very good timber trees of this kind in thin soils, on a substratum of wet clay. Regard must be paid in planting to these circumstances.

The *Wych Elm*, also, is a very hardy tree, but should be planted rather thick, in order to draw it up straight. The skilful forester will bear all these points in mind, and plant his trees in situations suitable to each species. Without this care, great labour and expense will be incurred, and no good result will follow. Mistakes in these particulars are exceedingly annoying to the proprietor, and often tend to disgust him with the otherwise pleasant operation of planting. T. APPELEY.

(To be continued.)

MATERIALS FOR COVERING AND TYING-UP WITH.

AMONGST the many good qualities of which we suppose ourselves, as a nation, to be possessed, some of an opposite kind present themselves; but our national vanity insists that many of the latter "lean to virtue's side." Be this as it may, there is one which certainly has a wide boundary with us, but which, nevertheless, is, to a great extent, neutralised by its non-injurious

tendency—the habit of grumbling. A lack of sunshine, or too much of it; excess of rain, frost, or storms, or a too great abundance of these phenomena, all tend, in one case or another, to a source of grumbling dissatisfaction, which fortunately receives no other commiseration than is accorded by two or more complainants sympathising with each other; the object wished for, though as certain to come as the wind which certain sybils were in the habit of selling to adventurous mariners of yore, comes none the quicker for the grumbling, nor yet for the buying; but as we have, in a great measure, abandoned the buying of fine days, gentle and suitable breezes, and other changes, except so far as encouraging the sale of quack almanacks, whose principal merit is in predicting these things, we may be said to be "advancing" in that respect, while, perhaps, our propensity for grumbling may be on the increase in like ratio, since there seems no fictitious means of obtaining our wishes, we take the greater license in giving vent to our regrets.

Why this should be so, is the province of other than the recorder of practical gardening to explain; but it evidently is the case, and, narrowing the charge from the community at large to that of a profession, I fear, as a body, we stand convicted of being as guilty as any other class. A winter is too severe for some, while it is not enough so for others; a summer is too dry and hot, otherwise too dull and wet; while the peetic period of spring seems to receive the greatest share of complaints of any; in fact, we hear of the "effects of a bad spring" forming a subject to harp upon for the next twelve months; so that, as a rule, we may as well plead guilty to the charge of habitual grumbling as accuse any one else of it.

Now, in bringing forward this petty grievance, I am induced to do so by the general, nay, almost universal, complaints I hear of the scarcity of *garden mats*. Of course, the cause is said to be the same which occasions many other things to be dear which are not scarce, and, probably, before the end of 1855, we may have them cheaper than ever they have been, by our traders, lured by the present high prices, glutting the markets with them, the same as they have done those of California and Australia with clothing and domestic utensils, and which they will probably do at the Crimea after they are no longer wanted; but allowing these great interests to right themselves, and as winter will, in all probability, have set fairly in ere this article reaches the reader, let us see what can be done to remedy the evil which the want of garden mats has created, and let us, at the same time, take measures so as to improve by the lesson their loss has taught us.

In the first place, I believe, there are few who will assume that we are in a position to manufacture mats, such as we have had from Russia, from native produce; but I am far from certain that we have not as good an article by us for the purpose to which mats are often put,—I mean covering frames and other things up at night. I saw a sort of "*rush matting*," a few days ago, which struck me as much more useful as a covering than the bark-woven article we have been receiving from the north of Europe. It was made solely of such rushes as the chairmakers use in bottoming chamber chairs, and strung together, the string forming the warp, or, perhaps, west of the substance; for I am not sufficiently versed in such matters to say which it ought to be called. Now, with string well steeped in tar, I have no doubt but this will be a much more durable article than the "old mat" we have been so tenaciously clinging to; but as I have not yet done with the "old mat," I will just throw in a suggestion I have often thought of, but expected some one else would have forestalled me; as the matter is one so often brought under the notice of practical men, as almost to create a

wonder why it has not been publicly noticed; but, as "everybody's business is nobody's business," I suppose it is right to attribute it to that cause.

Apart from the common purpose of using Russian mats to cover up frames, &c., large quantities are bought expressly for tying up plants of various kinds, and, generally, when a lot is brought in, the best are selected for that purpose. Now, instead of this, could we not have the same matting material dressed and tied up in bundles, so that we might use it without its having undergone the ordeal of weaving, and, perhaps, seen some service: besides which, we might stipulate to have only the good and useful matting, and let the coarse, or secondary kind, be made up as it now is. Assuredly, we ought to have our *tying material* cheaper than we now have it, for the labour and expense of manufacture would be confined simply to that of dressing it a little, and the article might be brought to our hands in a condition fit for use, and not impaired by any work it may have incidentally or otherwise performed. We all know that the bast material is much finer one way than the other, in the mats that are made for use; but the coarse, or strong way, is often useless for tying purposes, at least, for small things, and, in some instances, there is not anything else to use it upon, and hence the waste. Now, if we had our "matting" brought to us in bundles containing only what was really useful, we might then see it all without any such waste, and, probably, we might receive a better description than any we have had yet, were our wants fully made known on the subject.

Many things come to market now in a widely altered form from what they did years ago, the alterations being, in all cases, made to suit the customers, some, certainly, neither creditable to seller nor buyer; but, if some will have a cheap article, regardless of every thing else, we must not blame the manufacturer for pandering to that fancy, at the expense of everything else; but in the article I ask for, utility, as well as cheapness, would be combined, were the thing fairly got into a system, and our bundles (or whatever name might be given them,) of tying bast might form an item in the cargoes of our North Sea or Baltic traders, the same as "garden mats" have done in times past. Now, apart from the sending of us tying material in a suitable shape, I think the mats we do use might be made more to our wants than they are now; for, in spite of the thousand-and-one substitutes we have for them, a considerable demand will be made on them again, as soon as they are to be obtained. Now, when the trade does again commence, before which, for the welfare of society, we hope may not be long, could not some one send word to the districts where these articles are made, that they must make them stouter and better than they have of late years? for they are not half so good as formerly; and, likewise, direct them to preserve some of the best and finest of the material, for the purposes named above.

While on this head, I may say, that I have not seen anything as a substitute for garden-mats for covering up with that seems to answer so well in the long run; asphalted felt is expensive, and soon falls to pieces; while the article called "*Frigi domo*," is too thin to endure much service and do any good. I have, myself, used wooden shutters and thatched hurdles, but, of course, these things only cover a flat surface, like a frame or hot-bed; but I almost despair of seeing a good, useful article so cheap as mats once were. Nevertheless, we must not despair; our manufacturers are ingenious, and have responded to our call in the way of glass, and there seems no reason why they should not do so in the article "covering."

I had almost forgotten to mention that the *Cuba matting* was strongly recommended a few years ago, and many people were very fond of it; but I could never see

any particular merit it had over the old kind, and as it seems not to be very plentiful, and, latterly, has almost disappeared from our potting-benches, &c., we must either return to our old acquaintance again or adopt something else. For my part, I would rather see the original reformed a little, and retain him in service, than trust to a stranger, who promises much and performs little; but, though the means lie in our hands, we cannot attain it without an effort; which is, at the potting-time to make our wants known at the right place: to advise which is the object of my present chapter.

J. ROBSON.

THE FEATHER-HEADED.

By the Authoress of "*My Flowers*."

(Continued from page 183.)

LYDIA became the mother of two daughters; she had a son and a daughter by the first marriage also. I never heard anything of the young man, except that he is a settler in America, and doing well; but her daughter gave her trouble,—she was wild and unsteady, but has since married respectably, and is no longer a cause of anxiety to her mother.

The lady with whom Lydia lived after her husband's death, frequently saw her in her poor little cottage, and heard all her sorrows. She was perfectly wretched, disgusted and miserable. Unfit by birth, bringing-up, habits and disposition, to be the wife of a labouring man; he was as uncomfortable with her, as she was with him. She was always poorly, lying in bed; and unable to help herself, or him, and nothing is more disastrous to a poor man of any rank, than a sickly, helpless wife. Davis had to get up and make his own fire and breakfast, while she came creeping down stairs, long afterwards, into a dirty kitchen, which she could not clean, and received him in the evening with a pale, dismal face, a creaking, *sick* voice, and nothing comfortable. Could a good-tempered man go on long after this fashion, without being "by the head," as the Irish say? What, then, was to be expected from such a rough specimen of his class, as Davis?

I am not quite clear as to what was done with the eldest of her two last children, at this period. I have reason, however, to think she was taken and brought up by Lydia's own family for a time, because Lydia, exasperated at her husband's behaviour, and her own privations, determined to enter service again, and took a situation, leaving her youngest child, a little toddling thing, behind her, with its father. A woman has no right to leave the man she has married, and the child she has borne. There is no clause in the oath she took before the Lord to give her leave to do so.

Lydia took a cook's place, with a kitchen-maid under her. She was a good cook, a trusty character; and living in the Channel Islands, where the climate is exceedingly mild, her health improved greatly, and she was very much regarded by her master and mistress. But it came across her *whiffling* mind, all of a sudden, that she was wrong in leaving her little girl without a mother's care, and then she wanted to go home again. It seemed that a wavering disposition was at the root of her doings, for a sound principle would have kept her from leaving her child at all. However, home she came, and found little Emma running about like a gypsies child, with no one to look after her. So Lydia again entered upon the duties of a wife and mother, with the same consequences as before.

Davis always twitted her with her "larning." "What was she fit for with all her larning; she could not make him comfortable, or keep him out of debt!" and, indeed, Davis was right, so far; but *his* fault was in marrying for worldly reasons, and taking a woman who was above his rank in life. Things grew worse and worse. Sickness of a serious kind came upon him, and added to their misery. Lydia did her duty then, faithfully. I cannot help loving and honouring my own half of the creation, in spite of their many failings; and when a woman is fairly "in the trenches," she does her work with unshrinking British devotedness. [I cannot

thus allude to the all-absorbing subject of martial proceedings, without a fervent blessing upon our incomparable troops, who are shedding their blood with heroism never equalled. In this, I am sure, every reader will join me. May "the Captain of the Lord's host" lead them on, and may His "drawn sword" prevail!

Lydia waited on her husband, and nursed him, hand and foot, and bought things he needed out of the trifle she possessed, for he would buy nothing. Her unthriftiness had involved them, and what he did with his earnings did not appear; but they were getting deeper and deeper into the mire, and his land was mortgaged, and there was sad work among them. Then Lydia went off again to her own friends, who would receive her, but would have nothing to do with him, and she left her daughter Emma to take care of her father. Her elder girl had come home before this last step, had been seized with a dangerous illness, and after some months of extreme suffering, great expence, and immense fatigue to her mother, died. Then it was Lydia went, for a few days, to see her family, and stayed many weeks. Miss Emma took to dress very gaily (which, indeed, her mother had always done, and permitted her to do); she went flaunting about in her finery, became extremely light in her conduct, and when Lydia at last returned, she found her daughter's character gone.

This was a terrible blow to the mother. Poor, half-starved, and miserable, as she was with Davis, the state of her daughter's goings-on was worse than all. Bitterly, bitterly did she reproach herself then for going away, and leaving a thoughtless girl to her own devices, with only an old, sour, indifferent father. She saw, when too late, that her place was at home. When man or woman undertakes an office, *they must fulfil it*, "though briars and thorns be with them."

Just when Lydia was at the point of despair, a way of escape was placed before her. Old Davis's affairs were at an end; his land was to be sold for the creditors, and nothing but the Union was left for them all. Miss Emma declared she would never go there. Lydia was distracted at her obstinacy, and dreaded the consequences. She herself could get a situation still; but she dared not again leave her daughter; and her own friends, who would take her in, would have nothing to do with Emma. At this very instant, a long-delayed visit of her former mistress took place; who, when acquainted with the state of matters, offered to pay Emma's journey to her married sister, at N——, who had proposed to take her; give her an opportunity of redeeming her character, and then look out for a situation for her. Lydia demurred at first, with her usual feather-headedness; but her mistress was not to be turned. She would frank her to N——; but would give her nothing towards dress and nonsense; and, at last, after almost losing the advantageous offer, from folly and pride, the matter ended in Emma's receiving a railway ticket to London, and another to N——; so that no money was placed in her hands, but she was sent safely to her sister. Lydia, by this move, is enabled to look out for another situation. She proposes to put her husband into a lodging, pay his rent out of her wages, and do what she can for him; otherwise, they must both go to the Union. This she proposes; and this will be just and right, under the circumstances. It is, perhaps, the only right step she has ever taken; but what will the event be! Readers, I have filled my allotted space, and can say but a few words more. Mark the course of feather-headedness, and remember the words with which I closed my first portion of Lydia's story; cultivate sober-mindedness, and remember how needful it is, that our ignorance and folly should be bitted and bridled by the Word of God!

THE APIARIAN'S CALENDAR.—JANUARY.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

THE SEASONS.—"Such have been the last two seasons, as to drive every amateur apiarian from the culture of bees, and to make most of the cottagers destitute." So writes an old correspondent to me within the last few weeks, and one that is well versed in the management of bees. Another writes to me, requesting me, if I can, to sell for him his whole

stock of boxes, glasses, &c., at something less than half their original cost, consisting of a quantity of "Taylor's Improved Bar Hives," some quite new, others that have been used one year, and some two years, "Milton's Prize Hives," "Huishes Hives," &c.; and a third friend, quite disheartened by the last two or three bad seasons, applies to me to recommend him a customer for all his stocks, six or seven in number, chiefly in improved cottage hives. I am not myself, however, come to this determination, but am doing all in my power to save the few remaining stocks that I have, hoping, that after such a succession of bad seasons, good ones next may follow.

ENEMIES.—The *Vitmouse* must be sharply looked after and destroyed, as winter approaches, either by trapping, shooting, or bird-lime. I find the birds have already commenced their visits to my hives. *Mice* are also very apt to take up their winter abode inside the hives, where the single pedestal is not used; hence the necessity of a frequent examination of the hives.

VENTILATION.—Where boxes are used, ventilation cannot be too much insisted upon, and a frequent examination of the floor-boards; and where dampness and mouldiness is observed, they should be exchanged for clean and dry ones.

SNOW.—While snow lies on the ground the entrances to all the hives should be stopped, but not allowed to remain so for a day longer, on any account; and immediately upon the breaking up of a frost, every floor-board should be cleaned, or exchanged for a dry one.

THE COMING SEASON.—By the time our next calendar meets the eye of its readers, our little pets will have begun their labours for another year, in collecting pollen from the winter Aconites, and the early kinds of Crocus, and if the weather is not very severe, from the Elms also. Some years since, I was curious to learn from what a grey or ash-coloured pollen was obtained, which the bees brought home in rather large quantities very early in the season, at a time when the Aconites only could be seen in flower, but happening to pass beneath some Elm trees on a bright day, to my surprise, I heard the hum of bees, and on looking closely, I observed several very busily employed, which induced me to take a branch home, and by comparing under the microscope the pollen, which it shed abundantly on being placed in a warm room, with that brought by the bees, I found them to be alike, which fully satisfied me in this matter.

FINDING SPRINGS OF WATER WITH HAZEL-RODS.

A CURIOUS attribute seems to appertain to the persons of some individuals, *i.e.*, the power of ascertaining, with the aid of the above-mentioned assistance, a knowledge of the proximity of water, and of being able to form an estimate of its probable depth from the surface, through the influence felt in passing over it.

The "modus operandi" I have witnessed practiced has been, for the finder to divest himself and clothing of all metal, in whatever shape or form, whether coins, watch, knives, pencil-case, buttons, &c.; to take a hazel stick, which is forked, and clasping the two limbs in his hands, with the pointed end, or juncture, of the fork upwards; to walk steadily and stealthily over the ground, stopping at such places as the point turns downward (as the indication of the presence of water), and pronouncing the supposed depth from the strength of the shock felt. I do not write to inform the readers of *THE COTTAGE GARDENER* that I have heard of this; I have had "ocular demonstration" of the facts; and should any of them be able to give me any information which will lead to the definition of the subject, or the discovery of the agency which communicates 'twixt solid and liquid, so as to elucidate the matter, and make it more clear, I shall be fully obliged. Is it electricity? Is it magnetism? May it be satanic? as was ascribed to the "table-turning movement," some time since, by some of our prosaical friends, who thought it impossible for anything to be learnt that they were not acquainted with beforehand. I feel bold in staying this last impression, should it take possession of any individual's mind, by stating, that I can produce the testimony of two respectable gentlemen,

intelligent men, upwards of fifty years of age, both of them of clear intellect, and one of them a minister of the Gospel, and an author, both of whom have practiced the "art," in my presence, without being able to account for the influence which causes it.

The clergyman having learnt from the other gentleman, is, of course, not so well practiced, as to be able to judge, with the same amount of certainty, as to the depth and strength of the spring over which the stick may turn in his hands; but I have seen it turn with so great power as fairly to twist the stick, the ends, which he held, in his hands, remaining fast and firm, the pointed end obeying the attraction of the water.

It may be inquired, Why were the metals removed from the clothes and persons of the seekers? I feel it a duty to clear up this part of the apparent mystery, by stating, that they have so great a power of attraction in themselves, with certain individuals, as to frustrate, to a greater or lesser extent, the attractive power of the water in drawing the stick to it, which proves metals to be also a centre of attraction; but I have not heard any one of the gentlemen, with whom I am acquainted, possessing this attribute, state, that they could discriminate any difference between the influence felt over water, and that felt over metals. I know of no individual practicing it for "interest;" but could direct any incredulous person to a "spring-finder," who would give him "ocular proof" of the efficiency of the "hazel-rod," by passing over a recognised spring (as proof), and then passing over another piece of ground, and point out, by the stick's performance, where springs of water may be dug for with a great degree of certainty. An individual possessing this attribute, holding the stick as before described, with his watch in his waistcoat pocket, or fob, has an instant intimation given him of its presence, the point of the hazel-rod turning towards it.

The most remarkable instance which I presently recollect, occurred about ten years since. A body of proprietors built a line of houses on the brow of a hill, near to its summit, and it was not until after the houses were built, they bethought themselves of the necessity of a supply of spring water. They thought, having arranged a plan amongst themselves, that one well should supply the whole line of houses, they needed only to bore in a convenient place, and find what they required; but, in doing so, they came upon rock, within a few feet of the surface; and after a fearful deal of dangerous labour, they quarried out the well, ninety feet deep, without success. In this dilemma, they called on one of the aforementioned gentlemen, who kindly went to the place with his stick, and told them, that if they bored sideways about six feet, at sixty feet deep, they would, in all probability, get a supply of water. As "drowning men catching at straws," they thought they would try the experiment, and directed the quarrymen to do so, who, leaving their tools at the bottom of the well, one evening, on leaving their work, have been obliged to leave them there ever since, as there were thirty feet of water in the well next morning, and an abundant supply has been there ever since for the whole row of ten houses. Many individuals can corroborate this fact.

Under mystification, reason applies for a cause to produce an effect. We have here an effect produced without any assignation as to the cause that produces it; nor have I ever been able to trace it. I am not "maidish" in the matter. I know there are many things above my humble comprehension; but I have asked scores of intelligent men, hoping some one of them would be able to give me a direct answer, but without avail. And it is now that I find other individuals thinking the matter of sufficient importance to claim a share of their attention, that I am induced to apply publicly for information. Shaking the head, and mystifying the matter, by looking very much concerned, will not do, now-a-days. We must have reason, cause and effect, linked one into the other, so as to form a consecutive, unseverable chain. I should like to know what causes the forked Hazel stick to turn in the particular direction of water, as well as any man living. There is no man would be better pleased with the information than I should, provided the chain were complete by the explanation. I should, also, like to know why it should turn so effectually in one person's hands, and not in another's. Here is a question for solution! The

fact that it does turn, is already proved; but the reason of its turning is not discovered, unless it be "magnetic attraction." What is in one man's composition, as far as matter is concerned, seems to exist in another. Is it so? Or, would the combination of parts, if subjected to "analysis," prove so different in different individuals, as to justify the supposition that the cause existed there? This, Mr. Editor, you will doubtless consider, is a broad digression from "gardening topics;" but what gardener, I would ask, could, or would, do without a "spring of water," if he were not obliged? And if Mr. Jones can find a spring, why should not Mr. Jenkins be able to do so also, and in the same way?—C. B. S., Jersey.

MAIDSTONE POULTRY SHOW.

THE annual Exhibition of Poultry was held at Maidstone, on Tuesday and Wednesday, the 12th and 13th of December, and when it is considered that this show is one of the most recently-established in that part of the country, the committee of management have certainly great reason to congratulate themselves on the success of the meeting of 1854. The accommodation provided in the yards of the Kent Cattle Show was of the first order, both as regarded the feathered bipeds and their admirers, of which latter a very large number visited the place of exhibition, amongst whom were many ladies, who took great interest in contrasting and admiring the various species, from the diminutive *Bantam*, to the gigantic *Cochin*, which, however, have, in the "garden of England," lost favour as suddenly as they gained it, as but two pens were exhibited, and these were not considered worthy a prize. The display of *Dorkings* was numerous, and, for the most part, very fine; the prize birds were magnificent specimens of that useful class. The elegant *Spanish* were well represented; the prize cock was a most symmetrical bird. The *Polands* of Messrs. Cutbush obtained two prizes, and well they deserved them, as they far distanced their compeers in beauty and size of crest. No less than twenty pens of *Bantams* appeared in the field, to contest the palm of supremacy, and in this class the judges must have had some difficulty; although those adjudged as No. 1, were the smallest, still it appeared to us that Mr. Braddick's birds possessed the superiority in regularity of plumage. The *Hamburghs*, both gold and silver-spangled, were mostly exceedingly well-shaped birds; and the *Ducks* numerous, and so excellent, as to warrant three commendations in addition to the prizes, which, it is to be hoped, will another year be more extended, both in number and value. We would suggest cups or medals for the best collections, the individual pens of which might be also entered separately for the premiums of their respective classes.

The judges were Mr. Fisher, of Reigate, and Mr. George, of Merstham. We annex the prize list.

SPANISH.—Cock and two Hens.—First prize, Mr. John Monckton, Maidstone. Second prize, Mr. W. Dray, Farningham. Commended.—Mr. T. H. Spencer, Maidstone.

DORKING.—Cock and two Hens.—First prize, Mr. J. Blinks, Bid-denden. Second prize, Mr. J. Blinks. Commended.—Mr. W. J. Epps, Maidstone.

DORKING.—Cockerel and two Pullets.—First prize, Mr. P. S. Punnett, Chart. Second prize, Mr. P. S. Punnett. Commended.—Mr. J. Blinks.

COCHIN-CHINA.—Cock and two Hens.—None worthy.

GAME.—Cock and two Hens.—First prize, Mr. Charles Gibbs, Yalding.

POLAND.—Cock and two Hens.—First prize, Messrs. Cutbush, Maidstone. Second prize, Messrs. Cutbush.

GOLD-SPANGLED HAMBURGH.—First prize, Mr. E. L. Betts, Aylesford. Second prize, Mr. E. L. Betts.

SILVER-SPANGLED HAMBURGH.—Cock and two Hens.—First prize, Mr. J. Clinton, Maidstone. Second prize, Rev. G. B. Moore, Tunstall. Highly Commended.—Rev. G. B. Moore. Commended.—Mr. J. Clinton.

BRAMAH POOTRA.—Cock and two Hens.—No entry.

BANTAMS.—Cock and two Hens.—First prize, Mr. J. Clinton. Second prize, Mr. W. J. Braddick, Boughton. Commended.—Mr. Braddick.

ANY OTHER BREED.—Cock and two Hens.—First prize, Mr. Simmonds, Rainham. (Malay.)

ANY OTHER BREED.—Cockerel and two Pullets.—None worthy.

TURKEYS.—Cock and two Hens.—First prize, Mr. H. Solomon, Shorne. Second prize, Mr. T. H. Paek, Ditton.

GESE.—Gander and two Geese.—First prize, Mr. T. Allchin, Ditton. Second prize, Mr. T. Allchin.

DUCKS.—Drake and two Ducks.—First prize, Mr. J. K. Parton, Maidstone. Second prize, Mr. A. Warde, Burham. Highly Commended.—Mr. W. Dray. Commended.—Mr. E. L. Betts, and Mr. J. K. Parton.

AMATEUR POULTRY SOCIETY OF DUBLIN.

THE Society's third Annual Exhibition of Poultry, Pigeons, &c., was held in the large Round Room of the Rotunda, on Tuesday, Wednesday, and Thursday, 5th, 6th, and 7th, inst., and although the number of pens was not as large as last year, the show, from the superior quality of the specimens exhibited, may be pronounced to have been much in advance of its two predecessors. The improvement that has taken place in the Spanish, Dorking, and Shanghai classes, was very striking, particularly in the birds under a year old. Many of the buff pullets of the last variety were pronounced by competent judges to be equal to any they had ever seen exhibited in England.

The *White Shanghaes* were not beyond mediocrity; size and form were in many instances wanting. The few lots of *Partridge-feathered* birds exhibited were excellent, and had all the points the fancier esteems. The *Greys* or "*Bramah Pootras*" do not appear to have been much bred, as yet, in Ireland; there was but one pen of old birds, and five of chicken of 1854. One of the cockerels had the pea-comb of the Malay breed, the others, that of the true Shanghai.

The *Malay* class was very inferior, and did not contain one good specimen. The only two pens of *Game* fowl exhibited were excellent, well matched, and in first-rate condition. The laced *Hamburg* varieties were represented only by two lots of the silver-laced. *Bolton Greys*, and of the crested fowls, there was but one exhibitor, consequently no competition; however, the birds were beautiful specimens of the breed, both gold and silver-spangled, and awarded first prizes by the judges. It was rumoured that some of them would figure in the Birmingham arena on the 11th inst. *Turkeys* and *Geese* were few in number, but good, particularly those to which the prizes were awarded. Taking the whole class, the *Aylesbury Ducks* were inferior, but pen 184, first-prize old birds, and pen 188, of ducklings, were very good. The *Rouen Ducks* were, for the most part, excellent, true to feather, and of great size, and must have given the judges some trouble to decide to which pens the honours should be given.

The *Pigeons* were not numerous (thirty pens), but were pronounced by fanciers to have been generally an exceedingly good collection.

The pens were arranged back to back, in a single row only, upon two circular platforms, about three feet in height, one within the other, leaving a passage of about nine feet between them; the centre table was of the same height, and around the outer edge the cages for the Pigeons were erected. The construction was extremely simple, and very well adapted both for showing all the birds to the best advantage and for being kept clean. About three inches above the floor of the pens a stout lath was nailed to the partitions, upon which was fixed the wire lattice front; the top was secured by similar laths, about two inches asunder, running lengthways, thus admitting the light at the top, as well as in front; the bottom opening, in front, admitted the introduction of the feeding-pans, as well as, when necessary, of a small scraper, with which the droppings and peat mould with which the floors were strewn was drawn out, and fresh mould was then thrown in through the openings at the top. The birds were continuously kept supplied with water and corn, and every morning the pens underwent a thorough cleansing, by which the atmosphere was kept pure, and the unpleasant odour frequently attending exhibitions of poultry held in confined places was avoided. The committee and honorary secretaries are fairly entitled to great merit for the admirable manner in which all the arrangements of the show were conducted. The birds were despatched home on Friday morning, in apparently as good health as when they arrived at the Rotunda.

The Judges on Poultry were Thomas Rutherford, Esq., Mooretown House, Ardee; J. D'Olier, Esq., jun., Collegues,

Boottstown; and Mr. John Higson, of Preston, Lancashire; and on Pigeons, A. E. Gayer, Esq., Upper Mount-street, Dublin; and J. Irwine Whitty, Esq., Henrietta-street.

The following are the awards of the judges:—

Class 1.—SPANISH.—Birds exceeding one year old.—First prize, John North, Corrig Avenue, Kingstown. Second prize, J. H. Reid, Holmstown House, Kingstown.

Class 2.—Chicken of 1854.—First prize, James Forest, Roebuck House. Second prize, Wm. B. Selwood, Pearemount, Rathgar. Commended.—25. Wm. B. Selwood, Pearemount, Rathgar.

Class 5.—DORKING (Coloured).—Birds exceeding one year old.—First prize, The Rev. Chas. J. Hort, Montpelier Hill, Dublin. Second prize, Colonel Hill, Oatlands, Castleknock. Highly Commended.—29. R. P. Williams, Dame-street, Dublin.

Class 6.—DORKING (Coloured).—Chicken of 1854.—First prize, Rev. Charles J. Hort, Montpelier Hill, Dublin. Second prize, Rev. Charles J. Hort. Highly Commended.—52. Hon. Mrs. Lindsay, Island House, Island Bridge. 54. George A. Pollock, Oatlands, Navan. Commended.—49. Joseph F. Darley, Upper Leeson-street, Dublin.

Class 10.—SHANGHAI OR COCHIN-CHINA (White).—Chicken of 1854.—First prize, Thomas Bewley, Rockville, Blackrock. Second prize, Mrs. George Roe, Nutley, Donnybrook.

Class 11.—SHANGHAI OR COCHIN-CHINA (Grey—"Bramah Pootra").—Prize, The Honble. Mrs. Lindsay, Island House, Island Bridge.

Class 12.—Chicken of 1854.—First prize, Richard W. Herbert Nash, 6, Drumcondra Terrace, Dublin. Second prize, James Forrest, Seafield Avenue, Monkstown.

Class 13.—SHANGHAI OR COCHIN-CHINA (Light Colours, Lemon, Buff, or Cinnamon).—Birds exceeding one year old.—First prize, Thomas Skilling, Lakeview, Galway. Second prize, Thomas Bewley, Rockville, Blackrock.

Class 14.—SHANGHAI OR COCHIN-CHINA (Light Colours).—Chicken of 1854.—First prize, Andrew Mc Callagh, Monkstown Hill. Second prize, Thomas Skilling, Lakeview, Galway. Highly Commended.—108. Jaffray Barcroft, Kilbagget, Cabinteely. Commended.—101. Rev. Charles J. Hort, Montpelier Hill, Dublin.

Class 15.—SHANGHAI OR COCHIN-CHINA (Dark Colours, Black, Grouse, or Partridge).—Birds exceeding one year old.—First prize, James R. Dombrain, 36, Leeson-street, Dublin. Second prize, Thomas A. Polson, Rose Hall, Templeogue.

Class 16.—SHANGHAI OR COCHIN-CHINA (Dark Colours).—Chicken of 1854.—First prize, George Kinahan Glenville, Monkstown. Second prize, James R. Dombrain, 36, Leeson-street, Dublin.

Class 18.—MALAY.—Chicken of 1854.—First prize, Mrs. Strahan, Timolin, Ballitore.

Class 19.—DUTCH PENCILLED FOWL.—Birds exceeding one year old.—First prize, Honble. Mrs. Lindsay, Island House.

Class 20.—DUTCH PENCILLED FOWL.—Chicken of 1854.—First prize, George Kinahan Glenville, Monkstown.

Class 23.—GAME FOWL.—Birds exceeding one year old.—Prize, Wm. Madden, 75, James's-street, Dublin.

Class 33.—SEBRIGHT BANTAMS (Gold-laced).—Birds exceeding one year old.—First prize, James R. Dombrain, 36, Leeson-street.

Class 35.—SEBRIGHT BANTAMS (Silver-laced).—Chicken of 1854.—First prize, James R. Dombrain, 36, Leeson-street.

Class 36.—BANTAMS (Clean-legged).—First prize, Miss White, Bernardville, Rathmines.

Class 42.—WHITE-CRESTED-BLACK FOWL.—Birds exceeding one year old.—First prize, Richard P. Williams, Dame-street, Dublin.

Class 48.—SPANGLED FOWL (Golden).—Birds exceeding one year old.—First prize, Richard P. Williams, Dame-street, Dublin.

Class 49.—SPANGLED FOWL (Golden).—Chicken of 1854.—Richard P. Williams, Dame-street, Dublin.

Class 50.—SPANGLED FOWL (Silver).—Birds exceeding one year old.—First prize, Richard P. Williams, Dame-street, Dublin.

Class 51.—SPANGLED FOWL (Silver).—Chicken of 1854.—First prize, Richard P. Williams, Dame-street, Dublin. Second prize, Richard P. Williams.

Class 54.—TURKEYS (American).—First prize, Colonel Hill, Oatlands, Castleknock.

Class 56.—POULTS.—First prize, Colonel Hill, Oatlands, Castleknock.

Class 57.—TURKEYS (Norfolk).—First prize, Rev. Thomas Adderly, Stopford, Clongell Rectory, Navan.

TURKEYS (Cambridgeshire).—Prize awarded to 179. Mrs. Warburton, Kill, County Kildare.

Class 58.—GESE (Improved Breed).—Birds exceeding one year old.—First prize, Mrs. Warburton, Kill, County Kildare. Second prize, Mrs. Arthur B. Cane, Colinstone, Clondalkin.

Class 59.—GOSLINGS OF 1854.—First prize, Mrs. C. Bury, Roseville, Clane.

Class 60.—DUCKS (Aylesbury).—Birds exceeding one year old.—First prize, George Perrin, Bullock, Dalkey.

Class 61.—DUCKLINGS (Aylesbury).—First prize, Mrs. Warburton, Kill, County Kildare. Second prize, George Perrin, Bullock, Dalkey.

Class 62.—DUCKS (Rouen).—Birds exceeding one year old.—First prize, Capt. Fred. J. Isaack, Woodview, Donnybrook. Second prize, Thomas A. Polson, Rosehall, Templeogue.

Class 63.—DUCKLINGS (Rouen).—First prize, Capt. Fred. J. Isaacke, Woodview, Donnybrook. Second prize, Capt. Fred. J. Isaacke. Commended.—197. The Countess of Meath, Kilruddeny Bray.

DUCKS (Black South American).—Prize awarded to the lot No. 205. The Countess of Mayo, Hayes, Navan.

PIGEONS.

Class 64.—CARRIERS.—First prize, Miss White, Bernardville, Rathmines. Commended.—207. Richard W. H. Nash, Drumcondra. 211. Mr. John Dobblyn, D'Olier-street.

TUMBLERS (Almond).—Prize, Mr. John Dobblyn, D'Olier-street.

TUMBLERS (Mottled).—Prize, Joseph F. Durley, Upper Leeson-street.

TUMBLERS (Bald Pated).—Prize, Peter Jones, jun., Amicus-street, Dublin.

TRUMPETERS.—Prize, Richard W. Herbert Nash, Drumcondra Terrace, Dublin.

FANTAILS.—Prize, Peter Jones, jun., Amicus-street, Dublin.

BARDS.—Prize, Miss White, Bernardville, Rathmines.

NUNS.—Prize, John Dobblyn, D'Olier-street, Dublin.

TURBITS.—Prize, John Dobblyn, D'Olier-street, Dublin.

JACOBINS.—Prize, Peter Jones, 12, Amicus-street.

Class 65.—RABBITS.—First prize, John N. Jemison, Drumcondra Terrace, Dublin. Commended.—240. Richard W. Herbert Nash, Drumcondra Terrace.

PTARMIGAN, OR TURKEY FOWLS.

A FEW words as to the history of the Ptarmigan, or Turkey Fowl, may be interesting to the readers of THE COTTAGE GARDENER, to whom this variety was introduced, about two years since, at the instance of Dr. Burney, who appeared to have no information as to the country from whence they come. Having, through the kindness of a gentleman, who bought some chicken of Dr. Burney, some Ptarmigans, and liking them, because they combine utility with beauty, as fully as any sort of fowls I know, I have made some inquiries as to their origin and history, and the following is the result:—

Some fourteen years, or nearly, ago, Mr. J. E. Elworthy, of Plymouth, had four fowls sent him by a friend, an officer in the Royal Navy, which had been bought at Constantinople. These fowls were much admired by those who saw them, and Mr. Elworthy gave chicken and eggs to many of his friends; amongst others, Mrs. Shortland, of Lipson, Plymouth, had some, and at this place they have been kept as a distinct variety to the present time. Mrs. Shortland presented some to Mrs. Lowe, of Kingsbridge, and several years since, Mrs. Lowe presented some chicken to Mrs. Dr. Burney. In 1852-3, when attention was called to these fowls, Dr. Burney would seem to have forgotten whence he had obtained the variety, although he had bought Mrs. Lowe's stock, with the view of getting all the sort into his own hands.

If other evidence were required, as to these Ptarmigans being imported from Turkey, it is furnished by the facts, that during the past year, several lots of the same description have been received from Constantinople and the Bosphorus. Captain Russell, the commander of the celebrated steam ship, *Himalaya*, has brought over some procured at Constantinople, clearly of the same variety as Dr. Burney's; and a gentleman of Devonport, who sent out to a friend of his, in one of the ships on the Bosphorus, but not a fowl-fancier, to send him home some of the fowls of the country, and has received the same variety.

They are hardy, small, active, handsome, prolific layers, and good table birds. Are they synonymous with those recently shown as "Fowls of the Sultan?"—W. H.

THE AMERICAN MILK TREE.

WHAT most interested us, however, were several large logs of the *Masseranduba*, or Milk Tree. On our way through the forest we had seen some trunks much notched by persons who had been extracting the milk. It is one of the noblest trees of the forest; rising, with a straight stem, to an enormous height. The timber is very hard, fine-grained, and durable, and is valuable for works which are much exposed to the weather. The fruit is eatable, and very good,

the size of a small apple, and full of a rich and very juicy pulp. But strangest of all is the vegetable milk, which exudes in abundance when the bark is cut; it is about the consistence of thick cream, and but for a very slight peculiar taste could scarcely be distinguished from the genuine product of the cow. Mr. Leavens ordered a man to tap some logs that had lain nearly a month in the yard. He cut several notches in the bark with an axe, and in a minute the rich sap was running out in great quantities. It was collected in a basin, diluted with water, strained, and brought up at tea-time and breakfast next morning. The peculiar flavour of the milk seemed rather to improve the quality of the tea, and give it as good a colour as rich cream; in coffee it is equally good. Mr. Leavens informed us that he had made a custard of it, and that, though it had a curious dark colour, it was very well tasted. The milk is also used for glue, and is said to be as durable as that made use of by carpenters. As a specimen of its capabilities in this line, Mr. Leavens showed us a violin he had made, the belly-board of which, formed of two pieces, he had glued together with it, applied fresh from the tree, without any preparation. It had been done two years; the instrument had been in constant use, and the joint was now perfectly good, and sound throughout its whole length. As the milk hardens by exposure to air, it becomes a very tough, slightly-elastic substance, much resembling gutta-percha; but not having the property of being softened by hot water, is not likely to become so extensively useful as that article.—*Wallace's Travels on the Amazon and Rio Negro.*

THE GLASS TRADE.

In a lecture delivered in Sunderland, by Mr. James Hartley, on the art and manufacture of glass, the following interesting facts were stated in reference to the trade.—"Previous to the repeal of glass duty, in 1845, there were fourteen companies engaged in the manufacture of crown and sheet-glass; they were increased during 1846 and 1847 to twenty-four, and now are reduced to ten. In 1844, the last year of the duty, there was made by the fourteen companies, 6700 tons of crown and sheet-glass, paying £500,000 duty; there are now ten companies working forty furnaces, with 284 pots, making 35,500,000 feet annually, equal to 15,000 tons, value £225,000, being an increase of considerably more than ten per cent., and at a charge to the public of less than one-half of the former duty. In polished plate, there are six companies, being the same as existed in 1837, and, consequently, their number has remained stationary since the repeal of the duty, but their production is estimated to have doubled. They now make 3,000,000 feet of polished plate annually, equal to 5500 tons, valued at £450,000. Of Hartley's patent rough plate, which has only been fairly in the market about two years, the quantity now manufactured annually is 2,250,000 feet of 2lb. to the foot, valued at £30,000. The produce of the little kingdom of Belgium, the greatest glass-producing country in the world, is 50,000,000 feet of sheet-glass annually, equal to 22,300 tons, or twenty-five per cent. more than is made in England of both crown and sheet-glass. They export of this quantity eighty-five per cent., of which six per cent. comes to England, and they retain fifteen per cent. for home consumption; England retains eighty-five per cent. of its produce for home consumption, and exports fifteen per cent., being about double what she imports. In Hartley and Co's glass tariff, there are 7329 figures; also seventeen descriptions of glass, with fifty-one thicknesses."

QUERIES AND ANSWERS.

GARDENING.

LAMARQUE ROSE NOT BLOOMING.

"I have a beautiful and vigorous plant of *Lamarque* Rose, on its own roots; but for the last four years, the time I have had it, it has not produced one flower. It is planted against a south wall, in a good Rose soil, and annually makes plenty of strong shoots, but is barren. It is the only Rose

that disappoints me, and I am sorely puzzled what to do with it. A friend informs me, on the authority of Mr. Rivers, the great Rose-grower, that it will not flower on its own roots. If such is a fact, I intend to throw it away; but I would rather wait for your judgment in your excellent COTTAGE GARDENER.—LANCASTRIENSIS."

[This is another instance of the danger of letting well alone, and of the value of summer-pruning such Roses as grow too straggly without flowering. *Blairii*, and other hybrid climbers, seldom bloom if well pruned in the winter and are not touched during the summer, and this happens whether they are on their own roots or are worked plants. August and September is the proper time for *Lamarque* to flower well, and such plants ought, certainly, to have their annual pruning in June. Every shoot that is at all strong ought then to be cut to two-thirds of its length, and the shoots which rise immediately from the other third are the proper flowering shoots. Weak shoots need not be cut back in June, nor at any time; they are not natural to such strong Roses, and ought to be cut clean away in the winter. All shoots on this class of Roses, that are too much crowded, ought to be thinned out in winter, the rest to be left their full length till early in June. Take up your *Lamarque* immediately; shorten the shoots a little; plant it in the same place; cut out all the small shoots, and leave the rest till June; and our word on it, you shall have splendid Roses from it.]

WHICH IS THE BEST EVERGREEN ROSE?

"Which is the best perpetual Rose to blow this summer and autumn, to place against a south and a west wall; the west being protected from the north. All the excellencies of the Rose being required—in colour, sweetness, and shape? An evergreen is wished for; but such a thing is, for the duration of bloom, out of the question. The wall is eight or ten feet high.—A WELL-WISHER."

[This question has been often asked, but there is no evergreen Rose to flower through the summer and autumn, nor an evergreen Rose of any kind, except the old *Macartney Rose*. The nearest Rose to that which this, and other correspondents want, is still *Madam Lafay*; that good old Rose, on its own roots, against a wall, will keep green till the end of January, and flower later in the autumn than any other Rose we possess, and in a few years will reach up eight or nine feet against a wall. It flowers equally well on the Dog Rose stock, but will not keep green so long that way.]

MERITS OF ROSES.

"Among some bedding Roses supplied from a first-rate nursery, there are the following, which I do not find mentioned in your valuable publication. Would you kindly give the following information, viz.: the kind (whether *Noisette*, *Bourbon*, or other), the colour, and the time of flowering. They are named as under—

"*Souvenir de Anselmo*.

"*Aristides*.

"*Marquis de Murisnaris*.

—A SUBSCRIBER."

[Your three Roses are not first, second, nor third rate, for we have all the names of such at our fingers ends, down to last September, but we are not aware of having ever heard such names as yours, unless, perhaps, *Aristides*, and that we think we have seen or heard about some years back. Scores of French Roses are introduced every year, which turn out good-for-nothing in this country, although they are highly priced and prized by the French growers. Yours may have been from a sample of the kind, and may be as good as they were said to be, but that, or anything about them, has certainly not been made known by the "proper authorities." Show this paragraph to your dealer, and insist on the proper authority for his recommendation. If he can only give the word of an "ally," do not pay him till you prove the lot for yourself.]

GROWING CONIFERS FROM CUTTINGS.—SILVER CEDAR.

"The owner of the trees I wrote to you to enquire about has rubbed up his memory since I enquired about them,

and *thinks* now they were called the *Silver Cedar*, not the *Silver Spruce*; certainly, the former name is much more appropriate, as they are just like the Cedar of Lebanon in habit, except being more upright and taper in form, and lighter in colour. Will you please to tell me when is the best time for taking cuttings of *Cedars* or *Pines*, as I have seen recommended as a means of increasing some of the rarer sorts.—E. W. T."

[In warlike times, the best attributes of a nation or an individual, are, first of all, courage; then truth; and, last of all, kindness. With courage enough to tell the truth, and with kind feelings to all, we hesitate not to say that all that has been written about getting Cedars, Pines, and Firs from cuttings, is not worth a spent wadding from a "Brown Bess."

It is quite true that some of the very best propagators have struck cuttings of some of the kinds, just to show that they are not to be beaten on their own ground; but to write, and talk, and wish, and recommend, to plain dealing, common sense people, about this sort of gardening, is sheer folly; the thing cannot be done to any good purpose, and there is an end to it, and every lady ought to know that there is no earthly use in spending one's time striking cuttings of Cedars of Lebanon, or of Atlas, or India, or of any of the Fir tribe, or of the Spruce tribe. Nevertheless, cuttings of all of them have rooted, and some prefer wasting time, and all may know that from the 5th to the 13th of September is the proper time to put in the cuttings; that early in the morning is the best time of the day for taking the cuttings; but we need not waste time and space about the matter. The *Silver Cedar* is only another name for the Mount Atlas Cedar, *Cedrus elegans*.]

ROSES FOR STANDARDS—GESNERA ZEBERINA.

(The following are a letter to Mr. Fish, and his answer):

"My name is 'Eeles,' and, as it appears, we are both swimming in the same waters for our subsistence; though, probably, you might be a much larger fish, and swim in deeper waters than the eel can; yet, by your superior knowledge and guidance, I might venture to dive a little deeper, or swim something faster, with a little practice with you; and as I do not believe you to be of the crab kind, or I might get a rap on my nose, with your hard knuckles, for this intrusion. Now for the sequel. I must first inform you, I commenced taking in THE COTTAGE GARDENER last January; but I find, since, I ought to have taken the first part in November, as I am two numbers, or parts, deficient. I suppose I could get the two back parts—that is, for November and December—to complete the volume. I am sorry I did not take it in from its commencement, as I fear I have lost good information.

"I certainly have read the pages of THE COTTAGE GARDENER with much interest, and some profit; and as your worthy old Boatman, or 'Beaton, can't keep secrets,' and as reader of your secrets, &c., I may venture to suppose you row in the same old boat very comfortably together for the benefit of your several correspondents, I shall, therefore, venture occasionally to ask your opinion in little matters. The first is, I am now making some little alterations in a small geometrical flower-garden, on turf; five feet is the general width between the beds, and, as the garden is a parallelogram, we have spaces between the curves, or heads of the beds, four on each side, in straight lines. On these open spaces I have formerly planted a large *Tom Thumb* Geranium; but as I find there is room for a small circular bed four feet in diameter, I intend making eight circular beds, four on each side, exactly opposite to each other, and fill them with Roses; I think of having the best perpetuals, but whether they shall be dwarfs, standards, or half-standards, I have not decided. I am not very partial to the full standard Rose; and as our beds are on the dwarf, or bedding system, we have nothing more than two feet high, with the exception of a young *Cryptomeria japonica* in the centre, I have been thinking of dwarf pillar Roses for the four beds nearest the centre, trained as pyramidal Roses to three iron stakes, about five feet high, and of planting two or three good perpetuals, of different colours, in the other four beds. Nearer the end, I thought of grouping with dwarf plants of one good sort, and contrast of colours in a bed, which will be near the four corners of the garden.

"The next favour I have to ask is,—I have a bed of seedling *Himalayan Roses*. The gentleman who gave me the seed, said he saw the parent Rose growing wild there, and truly beautiful it looks; very like our wild Rose at present. I have had them two years; but no appearance of flowers. I am thinking of planting them out on the turf as pillar Roses; but what think you of planting another good sort to the same pole or stake, in case this should not flower? Your opinion on these few remarks would greatly oblige, in the earliest number of *THE COTTAGE GARDENER*, with a list of the best sort of Roses for an early and late display. Would it be possible to grow Roses on turf as pyramids, such as Mr. Beaton gave us a description of, that were shown at the metropolitan shows last season?—EELS."

"P.S.—For a future occasion, or when an opportunity offers, would you give Mr. Baillie's treatment of *Gesnera zebrina*, and its best varieties? A friend of mine called at Nuneham some little time back, but did not see the worthy Mr. B. himself; but he saw his *Gesneras*, and he told me they surpassed everything he ever saw in the way of *Gesneras*. My *Gesneras*, rough as they are, generally gain admirers; but to see them in perfection, as Mr. B. grows them, they must charm the heart as well as the eye. I took a little more pains to grow them this year than usual, but failed in having the leaves perfect. I always get brown spots on the leaves, though I took a deal of pains to shade. I have two varieties; the earliest and freest flowering variety has the most crumpled and worst leaves; the latest flowerer has the best leaves, but does not flower half so freely. This last variety I had from my friend who called at Nuneham. I think I shall discard the *Gesnera*, but not the friend. I have a low hot-water pit, an early and late vinery, with greenhouse for their accommodation. This will oblige in a month or so."

[I am not quite sure that you possess all the characteristics that entitle you to be enrolled among the finny tribe. I should, however, so much like to examine your *points* more closely, the appearances on the first inspection being so favourable, that, in addition to wishing that you may for once escape the vengeance of our Sea King, for your unauthorised intrusion into forbidden waters, I would calm your apprehension by stating my *inability to punish*, either by the grip of the Crab, or the sweep from the tail of the Whale. You must have been a happy boy, Mr. Eels! What a blessing to know one's position in this watery waste, and to find that position recognised by others, and to have the sense to act accordingly. Three-fourths of the ills of existence proceed from the fact, that those who ought to teach such as us wisdom, will not know, and therefore never can get, their place and position. A wise man was your progenitor! He took care your compatriots should recognise you as a scion of the Eel family, and thus your fortune was so far made—you were born to eat with a silver-spoon. Just think of the briny tears I have shed, and for no fault of my own, but because my progenitors had the folly, or the cruelty, to entail upon me something of a *universal*, instead of *specific* name! I once scribbled in this work, "that there was much in a name;" and well did I know it, even before the day when I quietly *laid* myself down in a clear running stream, that every piece of toggery might be soaked, in order that I might be enabled to discard the hated petticoats, and don the trews, on every day of the week, as well as on the sacred Sabbath. Ah! it was wrong thus to impose on those who so dearly loved me. Since that day I have exhibited the strange phenomenon of a Fish out of water, and, the strangest thing of all, more comfortable *out* than *in*. My want of a position in the page of genealogy was a grievous misfortune. I think the *Crab* was almost the only thing that ever was found in water, that I had not the honour of having applied to me by my comrades in school-training. That omission might have been owing to a habit of being open-fisted and open-mouthed, some said, open-breasted. Almost everything else was given me as a name. A sort of doggerel rhyme was made of all the finny tribe, terminating with the terrible Haddock and *Grulse* (Gr-r-r-ulse), and without, or with, any provocation, the delectable music was shouted in my ears. The last time that a bloody stream flowed copiously from my frontispiece was when I attempted to chastise a giant fellow for his impertinence, and, as in the case of all war-

fare, even though victorious, got pretty well *thwacked* in return. Stick to, rejoice in your Eelship, Mr. Eels; we will swim together if we can; but do not blame me for incivility if either I cannot paddle along with you at all times, or, when hard pressed, get ensconced with you in mud or gravel, where some of your family friends have already baffled my efforts to bring them safely to land, and rightly too; for views of a skin round *my* wrist, and sights of a delicious morsel hissing in a frying-pan, no doubt presented themselves to their affrighted vision. Hurrah for peace! but not at any price.

We are certainly gratified by your opinion of our little craft, because it is so generally expressed by others; and, I believe, that opinion to be based by the confidence, that the old boatman, and all the younger ones, and the captain, know what they are about: are too wise to quarrel, and too prudent to waddle beyond their depth, describing the bottom of things as far and no farther than the lead drags.

I see no great objection to your proposed standarding, half-standarding, or pyramiding the open places, in your geometrical flower-garden; but should have formed a better opinion if I had seen a rough plan of the garden, with the knowledge given, whether it was raised, level with, or sunk below the surrounding surface. If these open spaces are to be turned into small clumps, and it is desirable to make them starers, as it were, there would be nothing gained in making four next the outsides groups that would merely contrast with the larger groups surrounding them. Many might think an open space of grass, with or without a single plant, different from any others in the flower-garden, would be preferable. Perhaps you would notice, some time ago, how unfitted Roses in general were to group with the general mass of bedding-plants, just because they cannot be got to bloom as continuously and to look equally massive. There would not be the same objection to a pyramid of Roses, as they would rise two or three feet above the garden level; but few perpetuums would answer well for this purpose, as they bloom more in succession than continuously. Such *Chinas* as *Abbe Moland*, *Fabvier*, *Cramoise superieure*, among the crimsons; and *Mrs. Bosanquet* among the whites; and *Belle de Florence*, blush, and *Aime l'Ibert*, white, among the Noisettes, would answer better than perpetuums, because they bloom more continuously. I have had flat cones of the *Belle de Florence* in such a four-foot bed, covering it wholly, and rising some five feet, or more, that were covered with bloom from the end of May to the end of December. In these places, five plants went to form the mass quickly; one in the centre and four round. But other things might answer better than the Roses, such as standard or pyramidal Giant Scarlet Geraniums, pyramidal bushes of Rollison's *Unique* Geranium, or as a *Cryptomeria* is in the centre, and flowers were less wanted, nice plants of Irish Yew. Great beauty during the summer, things that will be better day by day until the frost comes, will be more in harmony with the surrounding low groups than Roses. We quite approve of having the highest of these starers in the centre. Lists of Roses for different purposes have been given not long ago. I would advise trying your Roses from the Himalaya before placing them in a conspicuous position. With respect to *Gesnera zebrina*, I would say, never think of giving up anything you set your mind to. Much of the success depends upon well-ripened tubers, and I find that plants that bloom very late never bloom so well next season. Several gardeners in this neighbourhood grow them in massive grandeur; your conveniences ought to do. In addition to shades, keep the plants a fair distance from the glass, with a little air on, to prevent condensed moisture resting on the foliage. The points of culture have often been given, but may be repeated before spring. We have no doubt that the plants at Nuneham would be fine. Perhaps some one may tickle Mr. Baillie's generosity bump, and let the community profit in consequence. I was fortunate in meeting Mr. Baillie, at Nuneham; but I am in a little bit of a quandary, whether a lively sense of previous kindness could be the best plea for personally asking an additional favour.

October and April, respectively, commence the volumes. Back numbers and the volumes are to be had at the usual price.—R. FISHER.]

CULTURE OF PASSIFLORA INCARNATA, MITRARIA COCCINEA, AND DIELYTRA SPECTABILIS.

"A pink *Passion Flower* has grown luxuriantly at the back of my greenhouse this last summer, and flowered abundantly. I have had a *Mitraria coccinea* about the same length of time, which has never flowered, and scarcely grows at all. Perhaps you can tell me why? It is in a pot in the greenhouse. Will *Dielytra Spectabilis* bear the winter in an exposed part of the east of Norfolk?—HORENSIS."

[It strikes us that the pink *Passion Flower* must be the *incarnata*; and that, from its soft habit, will require free pruning, unless you manage to keep it green in winter, to cover your wall. See what was said lately, and also last week, on pruning *Passion Flowers*. All the *Mitrias* we have ever met with have grown rather freely. We would not do much with your plant until the days turned, unless you suspected the drainage to be bad, and the soil to be sour; in that case, we would repot it in peat and loam, and, most likely, in a smaller pot. If delayed until spring, prune away all the hard and craggy parts a short time before potting, syringe frequently, but gently, over the head, in preference to much water at the roots, until these are filling the pots, and keep the plant, until the middle or end of May, in the house, and a little closish at first, and you will soon have a healthy plant.

We have little doubt that the *Dielytra* will stand, and show a brightness in the bloom, never seen when coddled in pits, or forced in houses. But, as the winters are not greatly to be depended on, we would advise placing a few rough ashes over the tops, and, perhaps, sticking a spruce fir-branch or two, as both these will help to keep slugs, as well as intense frost away; the slugs feeding on the *Dielytra* with great gusto.]

GRAFTING HOLLIES.—CUTTINGS OF LAURUSTINUS AND PORTUGAL LAUREL.—SELECTION OF EVERGREENS.

"I should be glad to know whether the variegated Hollies could be grafted on the common Holly. Whether the *Laurustinus* will grow by cuttings and layers; also the *Portugal Laurel*. I have been planting a lawn lately, and still have a large piece of ground leading to a garden to lay out. I thought a mixture of flowers and shrubs would be the prettiest. What shrubs should be used? Holly, *Rhododendrons*, *Lanrels* of different kinds, and *Cypresses*, I have; but should like something new in the evergreen line, tall and showy. Dahlias and *Hollyhocks* and *Pæonies*, I thought of as flowers. Your correspondents have never favoured us with sketches of rustic seats, bowers, &c. They would be very acceptable to many of your readers. Will *Lignum Vite* grow by cuttings?—CYMRO."

[*Variegated Hollies* are all increased by grafting and budding, like the *Apple* and *Rose*, but earlier in the season, say the end of February for grafting, and June for budding. They will also come from layers, but take a long while to root. *Laurustinus* comes from cuttings as easily as *Scarlet Geraniums*, from the middle of July to the end of September, and they root from layers like *Weeping Willows*. The *Portugal Laurel* is a shy plant to root from cuttings or layers; they are generally grown from seeds; but they will root slowly both from cuttings in August and September, and from layers made any day in the year. Plant the ground for *Evergreens* so that you could ride on horseback round each plant without touching a single leaf on either side. There is nothing new that way for planting to suit you. If you want a hundred plants, take fifty kinds, and two of a kind, say, two *Silver Holly*, two *Golden Holly*, two *Hedgehog Holly*, two *Tree box*, two *Weeping Tree Box*, two *Minorea Box*, two *Canadian* or *Hemlock Spruce*, two *Fraser's Spruce* (*abies Fraseri*), two *Virginian Cedar*, two of *Horizontal ditto*, two of all *Cypresses*, and *Yews*, and *Junipers*, and as many more as you fancy yourself in a good nursery. After planting them all over your ground, fill up to your own taste with *Laurustinus* and *Evergreen Berberis*, with some good *Rhododendrons* towards the front, with *Pæonies* and common bulbs, and with *Hollyhocks*, &c., as you say at the back. "Rustic work" is, at best, but a rickety concern, and the most expensive about a garden. We never

use rustic work nor recommend it. *Lignum Vite* will grow from cuttings, and better under a hand-glass; put them in at the end of July.]

STOCKS FOR DWARFING THE APRICOT.

"In your opinion, would the *Sloe* answer as a dwarfing stock for *Apricots* and *Peaches*? I have an *Apricot* grafted on the *Sloe*; it is growing vigorously, but has not yet borne fruit. What stocks would you recommend for these fruits, in the event of your not thinking the *Sloe* would suit?—APRICOT."

[The *Sloe* is the worst of all the *Plum* tribe as a stock for any member of the family. It is as hard as cast-iron, never swells or increases in size sufficiently to keep an *Apricot* in health, and it spawns from the roots like couch-grass; so much so, that some one said that if the *Sloe* was let alone, it would, in time, cover the whole face of the country. *Apples* grow on *Thorns*, on the *Mountain Ash*, on the *Pear*, and on the *Quince*, on the *Loquat*, and on the *Medlar*, *Cotoneaster*, &c.; and the *Apricot* will do the same on as many relatives of the *Plum*; but our word for it, the result is only curious, not useful. You may grow it on any *Plum* in the garden, or on the wild native little white *Plum*, and the same with *Peaches* and *Nectarines*; but with the modern system of root-pruning, or better still, by removing the trees every second year, till they are old enough to take care of themselves, *Apricot-trees* will grow on their own roots better than on strangers; but the bottom-soil ought to be very hard and dry for them, and not deeper than fifteen inches. We had them so long ago, and the secret is, not to let them get strong till they are able to bear such heavy crops as will keep them from too much wood. An *Apricot* on its own roots, however, does not like cutting back in winter. All the pruning ought to be done in the summer and autumn.]

POULTRY.

HAMBURGIS, AS EXHIBITED AT BIRMINGHAM.

"It would be very interesting to me, and, I have no doubt, to many other of your readers, if you could state, in your report of the Birmingham Poultry Show, as to the *Spangled Hamburgs*, both *Silver* and *Gold* (the former particularly), which of the *Prize* and *Highly Commended* pens have *hen-tailed cocks*, which *Spangle-hackled*, and which *Striped-hackled*?—A SUBSCRIBER FOR YEARS."

[Your enquiries have, in a great measure, been answered in our report on the Birmingham Show; but it may be well to refer to them again. 1. No *hen-tailed Spangled Hamburg* cock there received either a prize or commendation. 2. There was no instance of a *spangled-hackle* in the male birds of either variety, and hardly any of the *silver* ones had it striped. Our remarks on this class will already have shown our opinion as to this clear hackle being out of place in a *Spangled Hamburg*, either *gold* or *silver*.—W.]

HINTS ON THE PRESERVATION OF OBJECTS OF NATURAL HISTORY.

(The following is of general applicability, though addressed to those colonists who may be disposed to lend their aid in adding to the collection of specimens deposited in the Australian Museum,—By WILLIAM SHERIDAN WALL, Curator.)

In this age of intellectual advancement, when all classes are seeking knowledge, and the very humblest are making giant strides in the pursuit of it—it is the duty of all who possess the power and the time to encourage such efforts to facilitate their progress. In a new country like Australia, with its countless natural productions and singular forms of animal and vegetable life, as yet but imperfectly developed, what a noble field of research is presented to all lovers of science—how many strange and beautiful objects of nature, each bearing testimony to the supreme skill and faultless design of the Great Author of the Universe, are there yet surrounding us, neglected and unknown, filling up the perfect chain of creation, watched and guided by the Power that formed them; yet unheeded by man, for whose pleasure

or profit they were called into existence. We cannot know too much of the works of Nature; we worship God in his works, and every new design and adaptation in these faultless creations which we notice and examine, elevates our minds and exalts our ideas. It is, therefore, with the desire of interesting the public mind in the development of our natural productions, and of creating a taste for the beauties and wonders of nature, in this highly interesting portion of the Globe, that I have been induced to prepare the subjoined memoranda, pointing out in a simple and practical manner, the easiest methods of collecting and preserving such objects as may be met with by those Colonists who have leisure and who possess innumerable opportunities of improving their own minds, and aiding the advancement of science.

In conclusion, I would add, that my earnest desire is to see extended the vast field of the Sciences so rich on this Continent, which would render the formation of a good Museum so easy, as to tend to ennoble and expand the ideas of our colonial youth.

ON SKINNING AND PRESERVING QUADRUPEDS.

After a quadruped is killed, the first thing necessary to be done is to introduce some cotton or old rags into the mouth and nostrils, which will prevent the blood or liquid matter from flowing out and smearing the skin. This done, place the animal on its back, on a table, divide the hair right and left down the centre of the belly, and make an incision with a sharp knife, from the upper part of the breast-bone to the vent; in larger animals, to the tip of the tail. Then, with the knife you detach the skin from the body, removing it gently on both sides; if fat, use some dry sand with a little lime or powdered chalk—sawdust or bran may be employed as substitutes. When you have skinned well down on both sides, separate from the body the fore and hind legs; the fore legs to be divided at the scapular or blade-bone, cutting carefully through the fleshy parts until you come to the skin, the hind legs are divided from the hip-joints in the same manner. When thus separated, you remove the body or trunk, which is done by dividing the tail at its junction with the back-bone. Suspend the body by hanging it up with a cord; skin downwards towards the head, which is then separated from the neck. The body thus removed, proceed to take out the skull, taking care not to cut the eyelids till you come to the nose, when the skull will be detached. The skull may then be put into a pot of water and boiled; when well boiled, all the fleshy parts may be cleaned off, and the brains taken out. Return to the legs, and skin them down to the toes, if possible—take all the flesh from the bones, and make the skin inside as free from fat and flesh as you can. Then anoint the skin *inside* with arsenical soap, or some other preserving unguent. After the skull is anointed, fill out the eye-orbits with cotton, and the lower portions with tow or oakum—unraveled rope is a very good thing; pack the leg-bones with tow or oakum, as near to the natural form as you are able; return them to their places, fill out your skin with oakum, and draw it together with a few stitches. If you cannot, in skinning the legs down, get the skin to draw over the toes, make an incision in the under part of the foot, skin round the toes, and anoint them. The last thing to be done is to anoint the ears externally; having previously removed the skin from the grisly substance internally as far as possible.

SKELETONS OF QUADRUPEDS AND WET PREPARATIONS.

In preparing subjects for natural and artificial skeletons, what is necessary to be done is to remove the skin, which, if done carefully, and well preserved, may be set up irrespective of the skeleton. Take out the bowels, and clean away as much of the fleshy parts as you can, without separating the bones; macerate the body in fresh water for two or three days, until deprived of blood; hang it up in a draft of air, anoint it all over with a weak solution of arsenical soap; it may then be packed in a box or cask. Skulls of all animals are valuable, they should be collected whenever opportunity occurs; place the head in a jar of water until the soft parts become detached by maceration and putrefaction; wash them clean, and dry them in the sun. The teeth and jaws should be preserved when no means are available for preserving other parts. Animals preserved in the wet state,

for anatomical or other purposes, are best preserved in spirits, more especially our smaller Australian quadrupeds, some of the spirit should be injected into the abdomen and chest; it is also a very good plan to inject spirits into the mouth and anus. Attach a label with name, locality, &c.; the best label for wet preparations is a piece of parchment written on one side with pencil and on the other with ink; the writing will not be effaced by immersion in spirits.

CETACEOUS ANIMALS.—WHALES, PORPOISES, AND DUGONGS.

It not unfrequently happens that after storms, the carcases of these animals are thrown upon the coast. In such cases it is necessary to cut off the fins or fore-paws at the joints, also the flukes or tails, leaving in the *small bones* and the dorsal fin, together with these may be dried in a draft of air and sun; the *pelvic bones*, which consist of four or more of small size, are suspended in the flesh of the belly immediately above the anus; these bones are important, and must be cut out and preserved. The carcase may then be drawn above high-watermark, and a hole dug in the sand, where it may be buried, marking the spot by stakes or otherwise. The body may thus remain for months without proving offensive, and the decomposition of the flesh will leave the bones free and fit for transmission when dug up. The smaller cetaceous animals, such as porpoises, dugongs, &c., if too large to be packed entire, may be divested of flesh, and the skeleton may be divided into two or three portions, by separating the vertebrae, leaving the ribs and breast-bone connected; hang it up to dry in a draft of air. The head may also be separated, taking care of the teeth. In all cases where it is possible, a rough sketch on paper of the external form of the animal when first seen, with its measurement, &c., should be made, and its body carefully examined for parasites, which are sometimes numerous on these animals, and of considerable importance to naturalists. As it is very desirable that the important collections of cetacea already in the Australian Museum should be made as complete as possible, the officers of whaling vessels, and persons residing on the sea-coast, are earnestly requested to communicate to the Curator of the Museum, should it be known to them that any such animals are washed ashore. Loose bones even are valuable, particularly skulls.

(To be continued.)

RESULTS OF THE BIRMINGHAM EXHIBITION.

The receipts for admission at the doors on	£	s.	d.
Tuesday	294	5	0
Wednesday	460	8	6
Thursday	649	15	0
Friday	268	11	0
Total	£1672	19	6

The number visiting Bingley Hall would amount to about 42,000 exclusive of the subscribers; and also 963 children from Saint Martin's Ragged Schools; also all the Blue Coat Schools; the Saint Philip's School; the Free Industrial School; the Graham Street School; and all the inmates of the Deaf and Dumb Institution; which parties were each and every one gratuitously admitted.

The Poultry Sales, of all kinds, reached £1247 19s. 4d., against a return, from the same sources, in 1853, of £1681, having on the	£	s.	d.
Tuesday, amounted to	839	19	4
Wednesday	254	7	6
Thursday	25	15	0
Friday	127	17	6
Total	£1247	19	4

The apparent deficiency (at the first sight,) is very easily accounted for (from the sales of last year), the "single cock class" offering opportunities to purchasers of buying this year a coveted bird alone, for "crossing the blood;" whilst, in 1853, "no pen was allowed to be divided;" consequently, four specimens must then be purchased to secure

the one bird; the prices, too, at which the Poultry were "entered" by exhibitors, was, at this meeting, also, far more rational and moderate than in preceding years. In short, the numbers of *pens* sold this year exceeded those of last, though the sum total showed a deficiency.

TO CORRESPONDENTS.

* * We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of *The Cottage Gardener*, 2, Amen Corner, Paternoster Row, London."

ELEMENTARY BOOKS (*An Inquirer*).—Buy the *Grammar* and the *Arithmetic* in "Chambers's Educational Course." Loudon's *Self Instruction for Gardeners* will supply you with information relative to Surveying, Geometry, Book-keeping, and Drawing plans. Parke's *Chemical Catechism* and Henfrey's *Rudiments of Botany*, will be good introductions for those sciences. Buy also an English Dictionary, for you do not quite understand the meaning of words. Thus, you say, "Respective Sir," instead of "Respected Sir," Leave shorthand alone until you have mastered the sciences which are more essential for you.

FLOOR FOR POULTRY HOUSE (W).—The best floor we know is made of chalk rammed hard, and covered an inch deep with fine loose gravel. This allows the dirt to be raked off frequently and easily. The fowls with feathered legs are not *pure* Dorkings.

CATALOGUE OF PLANTS (A. B. R.).—The best is Loudon's *Hortus Britannicus*, with the last Supplement and Index, published in 1850.

SHERIFFSHIRE POULTRY SHOW (H. B. S.).—We received no report of it.

MIGNONETTE SEED (D. Wollaston).—The sample sent is good. We shall be obliged by any of our readers giving a statement how best to separate the seed from the seed-vessel and dress it. Amateurs need not be very particular about this. We sow the fragments of the seed-vessel and the seed unseparated.

PREPARING SKELETONS OF BIRDS, &c. (T. K. A.).—Any of our readers who will furnish us with a good mode of doing this will oblige us as well as our correspondent.

HEN EGG-BOUNN (G. C., Chichester).—We cannot do better than quote the following from *The Poultry Keeper's Almanack*, just published, and where you will find much relative to other common diseases of fowls:—"EGG-BOUNN.—This arises, in almost all instances, from excess of fatness in the hen, and consequent inflammation of the egg-passage. We think that a clyster of warm water would cause the egg to pass; but to prevent a recurrence of this dangerous difficulty, the bird must be put upon a low diet of boiled rice and mashed potatoes, with plenty of green food, and giving her daily, for a week, a pill, compounded of one grain of calomel and one-twelfth of a grain of tartar emetic."

CUTTING-IN A GRAPE VINE (*Ibid.*).—You had better prune it now.

NAMES OF PLANTS (*Jane B.*).—The specimen sent, called a leaf, is the central part of a seed-pod or silicle, of a very showy plant, called *Honesty*, or *Moon-wort*; its Linnæan name is *Lunaria biennis*. There are two species of this genus; the other species is called *L. rediviva*, a hardy perennial kind; both species are natives of Germany, flowering early in May and June, and of both species the flowers are of a light purple colour, but the *biennis* has a white variety. Now this plant *biennis*, of which the specimen sent is a part, forms a most imposing plant in our flower-borders, as a purple flower, during the early months, when *Cheiranthus Marshallii* and *alpinus*, *Viscaria utriculata*, *Allyssum saxatile*, as yellow-flowering plants, and the perennial *Candy-tufts*, &c., as white flowers, are also ornamenting our borders. In such cases and places, this purple-flowering biennial is extremely useful to mix with them. A few seeds should be sown in some bye place in the kitchen-garden, or the like, to plant out the following spring in the flower-garden.

CALENDAR FOR JANUARY.

ORCHID HOUSE.

AERIDES, *Saccolabiums*, *Vandas*, and such-like Indian plants, give water to once during the month. **AIR**.—In the first month of the year we frequently have severe frosty nights, and clear, bright, sunny days. The heat necessary to keep out the frost, and the bright sun,

will raise the temperature of the house too high; to lower it to the right pitch air must be given, and the apertures to give air ought to be so placed that the cold air does not rush in directly upon or through the plants. The best place for the openings is directly opposite the pipes; the air then becomes heated in a degree before it reaches the plants. **BLOCKS**; plants on these will require attention; any that are loose should be refastened; cleanse the leaves and pseudobulbs from green scurf and all kinds of insects. **CYRTOPODIUMS**, see to; if any fresh growth is observable, repot in a rich compost. **DENDROBIUMS**, remove into a cool house; such as show growth may be potted and kept moderately moist. **HEAT**: keep both the houses to the lowest point of heat for the first half of the month; as the days lengthen allow the heat to increase a few degrees. **INSECTS**, continue to destroy. **MOISTURE**: on sunny days sprinkle the walks, walls, and pipes, two or three times a day. **PHAIIS GRAMMIFLORUS**, now flowering, give plenty of water, and, if convenient, plunge the pots in a bed of heated leaves, or tanner's bark. **POTTING**, continue to perform upon all orchids beginning to grow. **SOILS**, procure, such as fibrous peat and turfy loam; lay them in a place to dry, to be ready for the general potting next month. **SORALIAS**, place in a cool house; heat 55° by day, and 50° by night; cut down all the shoots that flowered the preceding summer to allow room for the young shoots; keep them quite dry while at rest. **STANHOPEAS** in baskets, if growing, dip in tepid water. **SYRINGE** blocks, as directed last month. **WATER** at the roots, apply carefully; do not wet the young shoots. T. APFLEBY.

PLANT STOVE.

See last month. Prepare a hotbed, e., to strike *cuttings* in. **CLIMBERS** beginning to grow, tie in. **FRANTHEMUMS**, and other winter-flowering plants, give manure water to occasionally. Turn *tun-beds*, and renew the heat by adding fresh bark. **POT** a second hatch of *Achimenes*, *Gesneras*, and *Gloxinias*, to succeed those done last month. Give moderate supplies of water till they begin to grow. The heat of this house must still be kept low, as too much excitement will, for want of light, cause the plants to grow weak, and the young leaves to come yellow. **SEEDS** of stove plants sow, e., giving only one watering till they begin to appear. Hard-shelled seeds steep in water heated to 180° or 200°; leave them till the water cools. **SPONGE** all large leaves, to clear off dust and insects. **SURFACE-STIR** the earth in pots, and clear off weeds and moss, and add a top-dressing and fresh compost. T. APFLEBY.

FLORISTS' FLOWERS.

AIR.—Whenever the sun overcomes the frost draw off the lights, it will refresh the plants much; if kept on the plants will begin to grow, and will be more liable to suffer from close covering during severe weather. In dull, humid, mild weather, give air at the back or sides by tilting up the lights. **ANEMONES** may yet be planted; choose a dry day for the purpose; cover the tubers with a thin layer of white sand. **AURICULAS** and **POLYANTHUSES**, dress off decayed leaves; search for slugs in the frames and under the pots. **CARNATIONS** and **PICOETES**, water when dry; pick off decayed leaves. Any leaves not decayed, but showing spots on them, remove; it is the plague of these plants. **CURYSANTHEMUMS** now partially at rest, water once; any advanced shoots cut off, and make cuttings of; those out-of-doors place a slight covering of tanner's bark round, to protect them from frost. **CINERARIAS** will now be showing flower; water when dry; pot seedlings; repot young, small plants, struck late, to encourage growth. **CALCEOLARIA** seedlings, pot off from pans; repot young plants; give plenty of air to; smoke frequently, to destroy green fly; attend closely to watering, and avoid wetting the leaves; pick off daily all decayed leaves, and clear the surface of the soil of moss. These are, as the term is, *miffy* plants, and soon lost, without great care through this month. As the frost in this month is often very severe, apply COVERINGS of sufficient thickness to keep it out; light, open material, such as fern or straw, with a single mat over it to prevent it blowing about, is better than a covering of three mats laid close upon each other. **DALIAS**, examine, and clear away all decayed tops or hulbs; any roots quite gone throw out at once. **FUCHSIAS**: as soon as shoots are made half-an-inch long, slip them off, and put them in sand under hand-glasses to strike; these early short cuttings, or slips, strike easily and quickly. **HOLLYHOCKS**: should the weather be open, plant them out; if not already done, the sooner this is done the better chance there is to have good bloom. Use hoops and mats over the **TULIP** and **HYACINTH BENS** in severe frosty or heavy rainy weather. **LOBELIAS** (Tall), keep from severe frost, and moderately dry. **PANSIES** in pots, look to, and water-gently when dry; search frequently for slugs; those in the open air, in mild weather close the earth (loosened by frost) to the plants; if open weather, give a top-dressing of decayed leaves and a little soot. **PINKS**: after the frost is gone press the soil to with the hand firmly, or they will be thrown quite out of the ground. **RANUNCULUSES** may be planted, weather permitting, the last week in the month (see former number of *THE COTTAGE GARDENER* as to the manner); water, give none in frosty weather, but as soon as a change takes place, apply it early in the morning of a fine day. **VERBENAS**, give air to; trim off decaying leaves and mould; stop such as are growing and drawing up weak. T. APFLEBY.

FLOWER-GARDEN.

ANNUALS in borders, keep free from fallen leaves or other litter; and, if the weather is fine, sow a few more at the end of the month. **BULBS**, see that mice or rats do not get to them; fresh soot keeps them off for awhile. **CUTTINGS**, of various hardy deciduous shrubs, climbing *Roses*, and the like, may yet be put in. **EDGINGS**, see that they are in good order; slate edgings are the best, then box; either may be laid this month. If the soil is dry at the end of the month, plant some *GLADIOLI*, such as *Psittacinus*, *Gaudanensis*, and their varieties, and continue in monthly succession to the end of April. Forget not to procure such *stakes*, *rods*, *pegs*, and *tallies*, as may be wanted next summer, in time. Destroy *rats*, *mice*, and other creatures destructive to seeds and roots.

Again look at the protected plants to see they are dry. GRASS, keep it clean and well rolled. HEDGES, evergreen and otherwise, may yet be planted and dressed. LAYERS of evergreens, or deciduous shrubs, may be made as the borders are elcated. MANURE, in composts, apply to such flower-beds as may require assistance; and in a solid, rotten state to all Roses. MULCH all newly-planted trees, &c. POTTED PLANTS in reserve garden secure from frosts. PLANTING, push forward in mild weather. PRIVET, make cuttings of the young shoots for increase. PRUNE and regulate every tree or bush which requires it; be more sparing with evergreens. RANUNCULUSES, if the soil be dry, plant a lot for another succession. ROSES, prune, plant, and dung, if not already done; protect *Tea* and young *Bourbons*; and wash them with strong lime and soot paint, to kill moss and insects. SERDLINGS, and all young plants, protect according to their hardihood and strength. SUCKERS, pull up and destroy, unless wanted for increase, as those of some Roses, &c. TRENCH vacant ground. WALKS, roll as soon as they are dry, after rains or frost, and keep them regularly elcated. WEEDS, destroy everywhere. WHEELING, reserve for frosty or very dry weather. Four times, within our memory, after unusual mild weather to the middle of January, we experienced *severe frost* and rough weather; provide against another of these trials in time, and see that everything is ready for securing a supply of ICE at the first opportunity. D. BEATON.

ORCHARD.

APPLES, cleanse from blight, moss, &c.; brine and soft soap are good for such purpose. BUSH-FRUIT, plant, prune. COMPOSTS, procure and prepare. CHERRIES, plant, prune. CUTTINGS, plant of Gooseberries. FRUIT-ROOM, look over weekly; be sparing in giving air; remove decaying fruit, and keep the room dark. FILBERTS, plant. FORK, borders. GOOSEBERRIES, plant, prune. LAYERS, make. LOAM, procure for stations. MULCHING, perform. MULBERRIES, plant. MENLARS, plant. NAILS and *Shreds*, dress. NECTARINES: See *Peaches*. PLUMS, plant, prune. PEARS, plant; prune ordinary kinds. PEACHES, plant, prune, train, and dress. PLANTING in general proceed with. STATIONS, make. TRAINING in general proceed with. TRENCING, carry on. TREES, stake. VINES, prune and train. WALNUTS, plant. WALL-TREES, in general prune and regulate. WASH, the following, may be applied to walls: two-parts soot, two-parts sulphur, four-parts lime, applied with a brush into every crevice; urine or soap-suds, or both, may be employed to mix with. R. ERRINGTON.

FORCING-HOUSE.

AIR: See *Ventilation*. ASPARAGUS, get out succession-beds on mild heat. APRICOTS: See *Peach*. BOTTOM-HEATS, sustain and assist, 72° to 78°. CUCUMBERS, top, dress, train. CHERRIES: See *Peach*. COVERINGS, use where possible, to save fire-heat, and to protect from extremes. FIGS: See *Peach*. FIRES, use discreetly. GLASS, wash all roofs. GRAPES, ripe, use fires and air liberally, remove decaying berries. INSECTS, extirpate: use fumigation, the sponge and soft soap. KIDNEY-BEANS, pot, and provide successions. NECTARINES and *Peaches*, in bloom, air liberally, and shake to disperse the pollen. MUSHROOMS, protect well, if out doors; in house, use much water on floors. PINKS, continue to sustain proper heat, to cover well in dung-pits, and remove linings. PEACHES: See *Nectarines*. ROOFS, protect in boxes, tubs, &c. STRAWBERRIES, give air and light, use liquid-manure where blossoming; introduce successions. TARRAGON and other *herbs*, introduce to heat. VENTILATE as freely as you dare. VINERY (Early), proceed steadily; keep a moist air; raise the heat at blooming-time; use sulphur against mildew. WATER, always use in a tepid state. R. ERRINGTON.

GREENHOUSE.

AIR, admit at every favourable opportunity, whenever the temperature outside is above 85°, except in windy or foggy weather, especially among Heaths, Epacris, and Azaleas that you do not wish to bloom early. In foggy weather, though warm, it will be advisable to put on a little fire, to change the visible to invisible vapour. If the fog was of short continuance, and could be kept out of the house, air might be dispensed with, as well as fires, though it should not be forgotten that the motion given to the air by a little firing is a great security for the health of the plants in dull weather. Soft-wooded plants should be kept at one end of the house. BULBS and hardy SHRUBS, such as Lilacs, Azaleas, and Roses, introduce from the forcing-house, placing them at the closest and warmest end of the house; Calceolarias, Cinerarias, Geraniums, and Chinese Primroses, clear, shift, and supply at times with manure-water. CAMELLIAS and CYTISUSES opening their buds, supply with manure-water. CLIMBERS, prune in, if not already done, those that produce their flowers on the young wood; others, such as *Kennedys*, now flowering and growing, attend to; and especially train, every day, the *Tropaeolums*, if you wish to prevent confusion. No time should be lost in potting such kinds as *Tricolorum*, *Jarraltii*, *Speciosa*, *Azurea*, &c., if not already done. FIRES, light in close, dull weather, to enable you to give a circulation of air. Beware of heating too much when frosty, as, without due precaution, the atmosphere will be too dry; it is better to use coverings for the glass. FUCHSIAS: the forwardest may now be pruned and repotted. GERANIUMS and CINERARIAS will, in all likelihood, want cleaning and fumigating. The first may now be repotted for late May and early June blooming, and the latter must be shifted and kept growing, so as to prevent them throwing up flower-stalks, if late bloom and large specimens are desired. Where room is limited, a fine display is obtained by successions, and using not larger than six-inch pots. Not a withered leaf, nor an *aphis*, should stand longer than when seen. When the fly covers a leaf in myriads, smoking with tobacco then is tantamount to labour and money thrown away. Roses in pots, for April and May and June blooming, in the greenhouse, finish pruning; wash with a paint of soot, sulphur, and clay; top-dress with rich compost; and plunge, if possible, in a house or pit—sawdust will be a good material—and give at first a temperature of 40° to 45° at night, and from 45° to 55° during the day. SUCCULENTS, unless growing and showing flower, refrain from watering. *Tropaeolum Lobbianum*, and

Manettia bicolor, will be great ornaments now in a warmish dry greenhouse. WATER plants only when requisite, and perform the operation after breakfast, using water rather higher than the medium temperature of the house. Place a few Achimenes, Gesnera, and Gloxinia roots into heat for early blooming. In a conservatory or greenhouse, where no hard-wooded plants to speak of are grown, and where a medium heat of 50° can be maintained—that is, 45° at night, and 55° during the day—*Poinsettia pulcherrima*, *Euphorbia Jacquiniflora*, &c., may be introduced from the stove. For the *Poinsettia* especially, if a little extra heat can be given in April, a close cold pit in summer, an average night temperature of 50° in October, and a medium of from 45° to 55° in winter, nothing can surpass the brilliancy of the large crimson floral leaves, for a couple of months, at this period, while the brilliancy remains longer in such a house than in a plant stove. (See *Calendar of last month*.)

R. FISU.

KITCHEN-GARDEN.

ARTICHOKES, attend to, shelter, &c. ASPARAGUS, plant in hotbed; attend to that forcing; temperature about 65°, and at night 50°. BEANS, plant, b.; earth-stir among often; advancing crops protect from frost; plant in hotbed, if required. BEET (red), plant for seed. BROCOLI, protect from frost. CABBAGES, plant, c.; sow, e.; plant for seed. CARDOONS, attend to, shelter, &c. CAREOTS, sow small crop; plant for seed; (early Horn) sow on gentle hotbeds, fill the frame up well with earth, so as to bring the crop up close to the glass; attend to early thinning-out, and earth-stirring with a little pointed stick among all frame crops. CAULIFLOWERS in frames, attend to protection from frost, and give all open air possible in open weather, by taking the lights entirely off; also, hand-glass crops, clear away all decayed leaves and slugs, and earth-stir often; if young plants are required, a pinch of seed may be sown in pans, and placed in any heated structure, but have a gentle hotbed made up ready to prick them out upon, keeping the young crop up close to the glass. CELERY, earth up, shelter, &c. COMPOSTS, prepare and turn over. CUCUMBERS, sow and pick out; temperature, by day, 70° to 75°, and at night 65°. DUNG, for hotbeds, prepare in earnest; wheel on to vacant ground. EARTH for hotbeds, prepare. EARTH-STIR, and fasten plants disturbed by frost, &c. ENNIVE, blanch, protect. FROST, protect plants from, by temporary covering. GROUND, trench vacant. HORSE-RADISH, plant at any time during the month in open weather. HOTBENS, make and attend to. JERUSALEM ARTICHOKES, take up and replant in open weather, at any time during the month. KIDNEY-BEANS, sow in succession in hotbed, &c. KALE (Sea), attend to; force, in succession. LETTUCES, in frames, attend; protect from frost; sow on warm border, c. LIQUORICE, plant, c., and dig up three-year-old. MELONS, sow, for fruiting in May; day temperature 75°, night 65°. MINT, force, in hotbed. MUSHROOM BENS, make, and attend to those producing; procure horse-droppings for. MUSTARD and CRESS, sow in hotbed. ONIONS, clear from weeds; examine stored; sow a small crop, e.; plant for seed. PARSLEY, sow, c., protect from frost. PARSNIPS, plant for seed. PEAS, protect from birds, by straining a single string of worsted along over the row; attend to the early Pea sowing as near the first of the month as possible. It is a good maxim to always have a mouse trap or two set about the pea quarters. Sow: earth-stir; shelter from frost; and prepare stick. This is a good season for making main sowings of early and second early Peas where the soil works well and the weather is open. POTATOES, plant in slight hotbed; and they may also be planted out in the open border, or quarters, in fine open weather, where the soil works well. Examine those in the store. RANISHES, sow, in hotbed; thin out as soon as the plants can be handled, and sift a little dry earth among them; sow in border, e. RAPE (for salading), sow in hotbed; (edible-rooted), sow. RHUBARB, attend to; force either in pots, to be planted in some heated structure, or covered up with pots or tubs and fermenting materials. SALADING (Small), sow. SAVOYS, plant for seed. SPINACH, keep clear from weeds and fallen leaves; make a small sowing towards the end of the month. TANSEY, plant in hotbed. TARRAGON, plant in hotbed. TURNIPS, plant for seed; should the weather seem inclined to set in severe, store in a good supply, or heap them to cover them over with coal-ashes. WEEDS, continually destroy, and do any work which will lessen that of the following busier months; in particular, such as planting all the main out-door crops of *Potatoes*, wherever the soil will allow of it, and the weather is favourable. WOOL-LICE, destroy in the mushroom-house by trapping under dry hay, and scalding it in hot-water; or by baiting small pots with boiled potatoes, or slices of potatoes under dry moss. T. WEAVER.

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WEEKLY CALENDAR.

D M	D W	JANUARY 2—8, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
2	Tu	Chelifer Geoffroyi.	29.291—29.205	32—24	S.W.	—	9 a 8	iv	7 49	14	4 12	2
3	W	Acarus domesticus.	29.316—29.132	32—23	E.	—	8	1	rises.	☺	4 40	3
4	Th	Cychnus rostratus.	28.940—28.912	32—31	S.E.	86	8	2	4 a 51	16	5 7	4
5	F	Nothiophilus aquaticus.	28.920—28.000	36—31	N.E.	03	8	3	6 0	17	5 34	5
6	S	EPIPHANY. Twelfth Day.	29.104—28.989	38—28	W.	08	8	5	7 10	18	6 1	6
7	Su	1 SUNDAY AFTER EPIPHANY.	29.158—28.851	42—37	S.	33	7	6	8 22	19	6 27	7
8	M	Agonum vaporariorum.	29.169—28.897	46—31	S.W.	—	7	7	9 33	20	6 53	8

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-seven years, the average highest and lowest temperatures of these days are 43°, and 30.4°, respectively. The greatest heat, 54°, occurred on the 6th, in 1845; and the lowest cold, 6°, on 7th, in 1841. During the period 117 days were fine, and on 72 rain fell.

The greatest difficulty which the cultivator of a small plot of ground has to encounter is the acquirement of a sufficient supply of sufficiently cheap manure. If he has conveniences for keeping a cow and pigs, this difficulty is unknown to him; if he is careful of his house-sewage, as we recently shewed, the difficulty may be almost entirely avoided; and if, in addition to his allotment, he has a poultry-yard, it may be escaped altogether.

The dung of fowls is one of the most fertilizing of all manures. Guano, the richest, perhaps, of the whole, is no more than the dung of Sea-fowls; but our attention will now be confined exclusively to the dung of the feathered tenants of the farm-yard.

It is no modern discovery that this is a manure so valuable, for Varro, who was born more than a century before the Christian era, states, “that the fœces of birds are the best (manure), excepting birds which frequent water and the fens. Among these, the dung of Pigeons has the preference, because it is warmest, and ferments the soil. It should be scattered over the ground like seed, and not put in heaps as that of cattle.”—(*De re rustica*, i. 38.)

Columella, about A.D. 50, gives a preference to fowls’ dung before that of any other animal. He says, “There are three chief kinds of dung:—that produced by birds, that by men, and that by cattle. Pigeon-dung is reckoned the best of the first kind; next to it the dung of hens and other fowls.” (*De re rustica* ii. 15.)

The two brothers, the Quintilii, writing about A.D. 180, give the following almost similar statement:—“The dung of all birds is good—that of Geese and aquatic birds excepted, on account of its moisture, and even this mixed with other kinds is useful. The dung of Pigeons possessing much heat is very preferable to all others; on which account some scatter it thinly with the seed, without any preparation. It is useful to cold, sluggish soil, cherishing it, and rendering it more genial.”—(*Geoponica* ii. 21.)

These ancient testimonies might be much multiplied; but it will be more useful to refer to more modern evidence; but before doing so, we may as well observe, that the ancient prejudice against the dung of aquatic fowls is totally unfounded. That of Ducks is especially fertilizing, and Guano is a wholesale refutation.

The only crops to which, at present, we can bear testimony that the dung of fowls (that of Shanghaes) is highly beneficial, are the Cabbage-worts. We have

had some of the finest Savoy and Brocoli from plots to which no other manure had been applied.

Mr. Rust, of Enfield, writing in 1852, says—“I wish to call attention to a home-made manure, equal, if not better, than any Guano ever imported—I mean Poultry Dung. I have used it for a considerable time, and I now come to the conclusion that it ought to be used in a liquid state. I find it to be an excellent manure for almost all sorts of soft-wooded plants, as well as vegetables, which it is desirable to grow quickly. Hard-wooded plants do not form an exception, but for them it requires to be used with greater caution. I put one spadeful of dung to fifty gallons of water, stirring it up, and it is fit for use. Half that quantity of dung is sufficient for plants in pots.”—(*Gardener’s Chronicle*, 1852, p. 357.)

Other good authorities give their testimony that the dung of fowls is a very valuable fertilizer; and as it is little less powerful than Guano, if properly preserved, the following from Mr. Tollet of Botley Hall, Staffordshire, is valuable, as it shows how rapidly this home-made Guano accumulates. Writing to the Royal Agricultural Society, in March, 1853, he says,—“Keeping a large number of Cochins fowls, I began, in the autumn of last year, to collect the dung of my Poultry-yard, and am now possessed of two or three tons of it. The Poultry are fed with a regular proportion of animal food, Hempseed also being a considerable portion of their diet, together with corn of the best quality. I thought the dung produced might compete with the deposits of the sea-birds in the South-sea Islands. It is collected twice in a week, and is secured from the wet by being put into sugar hogs-heads. I am putting myself in communication with Professor Way, the consulting chemist of the Society, in order to procure an analysis of the Poultry-manure thus secured in my management of the Shanghae Poultry. The result of the analysis will shew how far this practice is likely to become a branch of our rural economy. The collection of the manure is effected at a trifling expense, and the health and cleanliness of the Poultry are thereby greatly promoted.”

Of the result of Professor Way’s analysis we are not informed; but we have no doubt that, coinciding with the previous analyses of Wollaston and Vauquelin, it will shew that the chief components are urate of ammonia and phosphato of lime. Two of the most valuable components of all excrementitious manures.

The following curious particulars, for which we are indebted to Dr. Thomson's "Animal Chemistry," is somewhat relative to our subject:—

"To Vauquelin we are indebted for an analysis of the fixed parts of the excrements of fowls, and a comparison of them with the fixed parts of the food; from which some very curious consequences may be deduced.

"He found that a hen devoured in ten days 11111·843 grains troy of oats. These contained,

Phosphate of lime, . . .	126·509 grains.
Silica,	219·548

346·057

"During these ten days she laid four eggs; the shells of which contained 98·779 grains phosphate of lime, and 453·417 grains carbonate of lime. The excrements emitted during these ten days contained 175·529 grains phosphate of lime, 58·594 grains of carbonate of lime, and 185·266 grains of silica. Consequently, the fixed parts thrown out of the system during these ten days amounted to,

Phosphate of lime, . . .	274·305 grains.
Carbonate of lime, . . .	511·911
Silica,	185·266

Given out,	971·482
Taken in,	356·057

Surplus 615·425

Consequently, the quantity of fixed matter given out of the system in ten days exceeded the quantity taken in by 615·425 grains,

The silica taken in amounted to, 219·548 grains.
That given out was only, 185·266

Remain, 34·228

Consequently, there disappeared 34·228 grains of silica

The phosphate of lime taken in was 136·509 grains.
That given out was 274·305

137·796

"Consequently, there must have been formed, by digestion, in this fowl, no less than 137·796 grains of phosphate of lime, besides 511·911 grains of carbonate. Consequently, lime (and perhaps also phosphorus) is not a simple substance, but a compound, and formed of ingredients which exist in oat-seed, water, or air, the only substances to which the fowls had access. Silica may enter into its composition, as part of the silica had disappeared; but if so, it must be combined with a great quantity of some other substance.

"These consequences are too important to be admitted without a very rigorous examination. The experiment must be repeated frequently, and we must be absolutely certain that the hen has no access to any calcareous earth, and that she has not diminished in weight; because, in that case, some of the calcareous earth, of which part of her body is composed, may have been employed. This rigour is the more necessary, as it seems pretty evident, from experiments made long ago, that some birds, at least, cannot produce eggs unless they have access to calcareous earth. Dr. Fordyce found, that, if the canary bird was not supplied with lime at the time of her laying, she frequently died, from her eggs not coming forward properly. He divided a number of these birds at the time of their laying eggs into two parties: to the one he gave a piece of old mortar, which the little animals swallowed greedily; they laid their eggs as usual, and all of them lived; whereas many of the other party, which were supplied with no lime, died.

"Vauquelin also ascertained, according to Fourcroy, that pigeons' dung contains an acid of a peculiar nature (uric), which increases when the matter is diluted with water, but gradually gives place to ammonia, which is at last exhaled in abundance."

THE annual recurrence of such a poultry gathering as Birmingham has lately afforded, both as regards the birds themselves and their owners and admirers, is

naturally suggestive of the various modes by which it may be thought possible to render the proceedings of such Associations still more efficient. From the general tone of conversation on that occasion, it may reasonably be inferred, that the necessity for "*a recognised standard of poultry excellence*" is now generally admitted. The opponents of such a measure, indeed, seem to limit their opposition to two points; first, the difficulty of the task; and, secondly, their apprehensions of increased labour to the judges, as if every individual in each pen would require the separated tabular enumeration of its failings and merits.

The obstacles alluded to, however, are so far from being insuperable, that when we require a distinct statement of their nature and effect, we are commonly referred to abstract ideas of the difficulties attendant on such compilations, with particular allusions to presumed objections, of which we are altogether unable to recognise the force.

Week by week is the conviction more and more powerfully impressed on our mind that an authoritative estimate of the points to be required in prize poultry must be the key-stone to the arch which the energy lately devoted to the subject has succeeded in carrying up to this point. Here our work must receive completion; not, indeed, by closing the doors against any subsequent consideration, or by enacting a statute like that of the Medes and Persians, which may never suffer revision, for perfection is not yet attained even in those breeds now best known to us, and remembering, also, that others yet unknown may hereafter ask for the consideration of their various claims, our standard must certainly be capable of readjustment, and of adaptation to subjects not now before us.

Here we may be permitted again to use the words of the able writer whose communications on the same topic were lately given to our readers.—"The fact is self-evident that there must be a standard of merit expressed or understood in the mind of every man who goes to judge a fowl. Then, why not have such rules of conduct in judging specified, settled, and made known, to light the path of the ignorant, and to serve as guide-posts even to the better-informed? As I before said, no rules will make every man a judge, either of a fowl, a horse, or a pig; there is the eye, the eye of comparison, the setting-off the difficulties and the merits, also, of A against those of B; and this requires tact and perception. But, of course, if a man has no laws, no rules to guide him, he is like a ship without a compass; but I am telling a three-fold tale."

These words exactly express our own sentiments; the code we would see established will profit nothing to the incompetent judge; but will surely prove of infinite service to any one who undertakes that office with sufficient qualifications; it will give his conclusions the seal of confidence as regards not merely his own views, but those of the poultry public generally, while the exhibitor will learn what to breed for, and the public how to estimate his labours.

We make no excuse for this digression, which may

serve to remove doubts as to the feasibility and good results of a scheme so essential as that to which we have now referred.

CHARACTERISTICS OF THE POLISH FOWL.

"Black with white top-knots."

"Gold-spangled."

"Silver-spangled."

"White."

"Black."

"Yellow laced with white."

"Blue."

"Mottled."

"Cuckoo."

Black with white top-knots.—Plumage, in both sexes, uniform glossy black, with the top-knot white, the feathers at the base of the tuft, in front alone excepted, which are black, the less of these the better; but we have never seen a bird of this variety honestly possessed of a wholly white top-knot. The top-knot of the cock to face regularly backwards, and partially on the side, but not so much as to intercept the sight; that of the hen to be firm, globular, and even.

Form. Comb of the cock minute, consisting of two horns or spikes, which are still smaller in the hen; wattles large, and brilliant in colour. Head concealed in a great measure by the crest, but rounded in the skull; eye prominent; body deep and full, the breast being very protuberant; carriage erect and active; These last points refer to both sexes. Legs short, clean, and of a dark slate colour.

Weight of the adult cock not less than 5lbs, nor of the hen than 4lbs.

Silver-spangled.—As the Golden; a silvery-white being substituted for the former ground-colour; tail black and white, that of the hen being evenly tipped with the former colour.

White and Black.—Each uniform in feather.

Yellow laced with White.—The white lacing, for it hardly amounts to spangling, to take the place of the black spangling in the Gold birds. The hackle, back, saddle, and wings of the cock, yellow, with occasional white feathers.

Golden-spangled.—Feather; Cock: hackle, back, and saddle, a brilliant chesnut-red; breast and thighs spangled with black on a clear golden-bay; tail ample, black, and richly bronzed; top-knot of the same formation as described above, has usually an intermixture of white, the more so as the birds advance in age. A reference, we think, should be given to such as are of the same uniform chesnut as the hackle. The wing-coverts laced at the side, but spangled at the extremities, barring the wing. The beard is now generally preferred, and is usually black; an intermixture of bay would harmonise better with the rest of the plumage, especially as wholly black top-knots are now justly disliked.

Hen: spangled throughout, except the top-knot, which should be laced, and the under part of the body, which is dusky, as also in the cock.

Blue.—A race of questionable purity; plumage uniform slaty-blue, spangled with white.

Black and White-mottled, of dubious parentage as the preceding. Some of these are spangled, or rather speckled throughout with black on a white ground, while others, where an approach to the long-lost "black-crested white Poland," has been sought for, are merely stained on the crest and hackle. No cross between existing Polish varieties appears likely to restore to us the black-crested white birds so generally and justly coveted; but on the Continent we have every reason to believe they may yet reward the persevering collector.

All the last-named birds, the blue, yellow, and mottled alone excepted, exceed, on an average, the usual weight of the white-crested black by almost a pound in each sex. There are some other sub-varieties of Polish, such as the grey, or grizzled, and the Cuckoo, which, however will hardly enter into competition with the foregoing.

The Judge of a Polish class must satisfy himself that no malformation exists in the back or hips of these birds. Legs of any other colour than blue must be considered as disfiguring. A coarse elongated comb is very objectionable. The top-knot being the great characteristic of the Polish, any serious defect in this feature must be considered fatal to the pen. The White ear-lobe should be present in all the varieties.—W.

GROWING EARLY POTATOES IN THE OPEN GROUND.

I TAKE it for granted that the public interest as to this root has in no way flagged, notwithstanding the dread of utter extermination held by some in consequence of the severity of the disease. In addition to this, we are now promised a *Potato Yam*, which is presumed to be of such superior quality as to drive our old favourite out of the market.

In the first place, how to obtain a safe crop of *early Potatoes* without covering; for, cultivating them under any kind of protection is ill-fitted to our broad acres, and, indeed, in any event, requires to be treated separately. I am sorry to see an erroneous impression very general amongst those who have not whistled at the plough; an impression which leads to much disappointment: it is this, that early getting depends on early planting. Nothing can be more erroneous. To say that the earliest planter, however, is never the earliest gatherer of his crop, would be attempting to prove too much. If our climate, through April and May, were such as that a frost was out of the question, why, we might soon settle the matter in favour of the early planter; but it is the reverse of this. Whatever may bias the success of what are termed "main crops," it is certain that the recurrence of frost, and the uncertainty as to how late in the spring it may visit us, are the great rocks ahead which the early Potato grower must principally dread.

In pursuance, then, of the subject under consideration, it becomes a somewhat serious question, with those, at least, who have a rental to pay, as to what period they should plant, and under what conditions.

I do not for a moment purpose a discussion as to the respective merits of autumn and spring planting; this is wide of the subject, and refers, I conceive, more to what are termed main crops than early Potatoes. The whole matter, as a thing of profit, and divested as much as possible of mere speculation, seems to be this:—At what period may *early* crops of Potatoes show them-

solves above-ground with every possible prospect of success?

This, I believe, on the average of seasons, will not be before the second week in May; at least, I have found it so in Cheshire—spoaking after twenty-six years experience. This, then, is one phase of the question; the next is, can they be so managed in planting them early, as that they may be at work below ground without appearing too soon above; if so, they would be in a more natural condition than lying in rooms. To accomplish this, there can be no doubt that they must be deeper from the surface than under ordinary planting; and, if so, I, for one, must protest against it; and this, indeed, is one of the chief objections, as I conceive, to autumn planting. I have repeatedly tried deep planting against shallow planting, and invariably found the latter superior, provided the Potatoes were properly earthed-up, a plan which some have protested against, but which I am bound to recommend, in conjunction with shallow planting. By shallow planting, I mean about four inches in depth; and by deep planting, to avoid frost, about seven to eight inches.

The next question is, Can we so manage *early Potato sets* in-doors, as that they suffer no injury, and at the same time make those advances which it is unsafe for them to make out-doors? To this I readily answer—Yes.

Of course, there is some difference in the nature of Potatoes; those who have grown them much, know that the much-esteemed *Ash-leaved Kidney* requires a somewhat peculiar handling. This kind has been extensively grown in Cheshire for many years, and, latterly, much pains have been taken over them by our farmers in this immediate neighbourhood, and amply have they been repaid for the extra trouble.

The best practice with which I am acquainted is this, to take up those for seed before they are ripe; certainly before they are anyways diseased; to spread them immediately on the floor of any outhouse; if it face the north, and the wind can blow through it, all the better; here they may lay a month or so, if requisite, when they may be removed, if necessary, to some cool, upstairs room, or if to remain longer where they are, must be turned.

It will be seen here, that the object is to harden, and, in some degree, green the sets; not that the mere colour of green is anything in itself, but as an indication of solidity in the tubers; for under this treatment they become so firm, that on cutting one it feels as if it were of a woody character. That this solidity, however it be produced, is a mark of health and strength in the tubers, no one practically engaged in their culture doubts.

Our readers will more naturally desire to know what is done with the seed Potatoes for early work, during the months of October and November; for we spoke of their removal, or, at least, being turned after being in the shed for a month or two. As for my part, having an upstairs room, over a shed, and facing the north, I keep mine there; and when economy of space becomes an object, about the middle of September, I merely place them in bodies against the back wall of the shed, and as soon as danger from frost is apprehended, merely throw some dry litter over them. At the end of February, they are placed in a position to sprout previously to planting; but, as there is a perfect identity of treatment henceforth between my practice and that of our best Potato growers, I choose now rather to say what they do.

A few years since those worthy neighbours and friends discovered that the old "anyhow" plan of having their seed Potatoes in the "hogs," or pits until April, and until possessing sprouts half a foot long, and blanched like Sea-kale,—discovered, I say, that the practice would not much assist in paying their rents, under the circumstances connected with the Potato disease; they, at

last, became convinced that the destruction of the first sprout, or sprouts, was a positive injury, and one too serious to be long joked with.

This, then, was the period for the commencement of reform in early Potato culture; and, henceforth, what had been considered a trouble, became, with some I could name, a pride. Boxes were now provided—simply a few skeleton boards tacked together, with a return edge to keep the Potatoes in; and here the pet *Ash-leaved Kidneys* or "Radicals" were placed, as sailors would say, "on their beam ends," as close as they could go together. Neither egg-packing—no, nor chandelier-packing either, could excel the packing of these fast men once converted. The time for doing this is about the end of January, or early part of February; and as to the mode of wintering previously, why, some even keep them awhile in the pits; but the majority have them stored away in hampers, or anything which may be at liberty—such are generally kept in a granary, or any loft or place, where the Ice King may scarcely enter.

These Kidneys, or other Potatoes, are thus taken in trays or boxes to the field, about the end of March, or, perhaps, middle of April. No moving allowed after being placed in the trays, and are thus transferred to the soil.

Thus treated, they possess green, sturdy-looking sprouts, half as thick as a finger, and about one-and-a-half inches in length; and not unfrequently these sprouts are thickly clad with greenish-looking fibres, which, like young, hungry thrushes in their nests, seem to have their mouths wide open, and anxious for sustenance.

It will be seen that the parties are fully impressed with the necessity for taking extra pains, and I have no doubt that the increased success which follows this care will speedily lead to an improved course of culture, or to other kinds and later crops.

I have known persons plant a considerable breadth of Kidneys as late as the middle of April; seed prepared as before stated, and to produce, then, earlier crops than those who planted the same kind in the third week of February. The latter having used unprepared seed, and planted deep.

R. ERRINGTON.

TEA ROSES.

It is now a little over twenty-four years since I made the first serious note about Tea Roses, or rather a Tea Roso; for then I had only heard of one, the *Odoratu*, or *Odoratissima*, as some called it. This was a light blush Rose, brought over from China, I believe. At all events, it was the first of the Tea-scented Roses which found its way into the country, though but sparingly, during my minority as a gardener. The last I saw of it was a bush eighteen years old, against the cottage of Mr. Lovett, late gardener at Shrubland Park for fifty years or more. This white Rose bush, and some other plant, which I forget, both died that summer that the worthy old gardener, who attended them for so many years, departed this life; and a strong superstition about these plants was current round about among the poor. It was rather a delicate Roso out-of-doors, and in heavy soils the frost often killed it. It was among the first plants which were pointed out to me, in 1829, in Herefordshire, as a fit subject for experiments in the beds for trying stove-plants, and all kind of house-plants in the summer. I never lost a leaf of it for some years at Haffield, but since then I have not been able to grow it, or any of the Tea Roses, out-of-doors; therefore, I have made it one of my *old texts* to write about.

Mr. Rivers says in his "Roso Amateur's Guide," or rather out of it, that there never was such a bad year for Roses as 1854; what the frosts did not kill, the dry weather in the spring nearly parched up, and the fly

and caterpillar, and all blights, took to them more than ever all through the summer, and it was late in the autumn before the fine harvest weather told effectually in their favour, and so forth. But, strange to say, there is a garden not far from me here, in a flat part of the country, and only a few feet above the level of the Thames, where about twenty or two dozen kinds of the best Tea Roses passed last winter and spring without the least apparent injury to any one of them, and yet they had not the smallest protection of any sort for years; some are on their own roots, some are worked low, and some are on standards; but all "fared" alike, to use a Suffolk phrase. From Kew Bridge, or, at least, from Richmond to Chobham, the land on either side of the Thames is generally very sandy, and water is not far from the surface; in some parts along the river the ponds and ditches are full, or well filled all the year round; the garden I allude to is surrounded on all sides, and close to it, with pond and ditch water, or, I might say, Dutch water, for this really is a hollow land, or Holland to the very letter, barring the fine timber; and yet, for all that, we can beat all the Rosaries in Great Britain, as I have often told.

There is nothing known to me to excel some of the Pillar Roses at Bank Grove, the seat of W. Byam Martin, Esq.; and in all the gardens round about, where people are fond of Roses, they, the Roses, do as well, and much better, than growers on strong loam could hardly believe. The Tea Roses which I allude to are growing in two-thirds black sand and one-third rotten-dung and vegetable remains, on a damp, flat bottom—that being the kind of compost of which the garden is composed; and to my certain knowledge, no Tea Roses can bloom better than they do, year after year, and this autumn in particular. The only thing which I can see in their favour, is, that the gardener is a Rose fancier, and knows what he is about. Well, what I was going to say, is this: are we sure, that we ourselves do not kill Tea Roses more than the frost, by the way we grow them out-of-doors? I think many of us do kill them by too much kindness, too much loam, and in situations too dry for them by far in summer; and I am among the number, as I shall tell presently. But, first of all, let me tell my experience beyond twenty years back.

When I was experimenting on stove and greenhouse plants, in open-air beds, the top soil was too heavy, and the whole of it had to be moved down to the rocky gravel on which the garden stands. The beds were then filled from the top spit from Bromsberrow common, mixed with as much rotten and half-rotten leaves as I could spare; but not to the extent of one-third of the mass, except the last nine or ten inches on the top of the beds, which might be about the proportion of two-thirds turf to one-third leaf-mould. This common was of a bastard kind of half peat and half black-sand, far too light for Rhododendrons; but the Messrs. Wheeler, from Gloucester, and even the nurserymen round Worcester, used to take it for their American plants; their nurseries being on more moist bottoms than our experimental beds, which we filled with the fresh turf, chopped up at once. Almost every kind of plant would grow in these beds for two or three years, and it was easy to renew them from the common close at hand; but what used to surprise people was, that marsh plants, as *Cannas* and *Hedychiums* flourished there so well; also *Justicias*, and others which like very rich soil, as *Salvias*. It was in one of these experimental beds that the first *Salvia fulgens* flowered in England; also the first of it in Scotland, I sent to Mr. Barnet, then gardener to the Caledonian Horticultural Society. I bought it for ninepence, in a mistake, from the Messrs. Young of Epsom; but next year it was up to ten shillings and sixpence, and I made a good harvest of it by exchanging to fill the experimental beds; but I lost the credit of having

first flowered it. Then, and at that time, the *Odorata* Rose and the Ghent *Azaleas* were new plants in the West of England; and Douglas's things were tumbling in by handfuls from the Horticultural Society. His *Calochortus venusta* and *splendens* perished in one of these beds, and they have not been heard of since. But let me keep to my text,—the *Odorata*, or Tea Rose.

In 1830, Mr. Ellis, who was gardener to the Marquis of Bath, at Longleat, and after that to the Lord Bishop of Armagh, and since dead, wrote a letter on the *Odorata* Rose, in the "Gardener's Magazine," and, for a year or two after that, no Rose was ever more sought after than the *Odorata*. I bought it, I begged it, and I exchanged largely for it, to put it into the experimental beds; and I question if ever it flourished in any beds so well since; certainly not with me, for I tried it in far better beds, as I thought, both at Kingsbury and at Shrubland Park. The first bed was forty feet long, eighteen inches wide, and fifteen inches above the natural surface, and against the south front wall of a conservatory; it was filled with the best yellow loam from Watford Common, and leaf-mould, and some rotten dungs; and the second border was also a raised one, and filled with the best yellow loam, and the best rotten dung and leaf-mould, but the Tea Roses would not do well in either, although the same loams did well enough for them in pots under shelter. This is my own experience, and every one now recommends the best yellow loam, and the best rotten dung for them; but I fear we have gone too far, and I think that *fresh* turfy soil, from a poor common, with rich leaf-mould, and rotten dung, is the best for them out-of-doors. My own experimental beds, in Herefordshire, and the experience of Mr. Thomas Manners, gardener to the Lady Lambert, in this neighbourhood, go to confirm my opinion. At all events, if any one takes up the subject as I lay it down, and as I mean to try it myself, this next season, the bottom and body of his bed, for Tea Roses, must be just contrary to the ideas of the present day.

I recollect very well, that twenty years ago, when Mr. Rivers first classified the Roses into groups, that he used to write and say, that pure sand and rotten dung was best for tender ones in clay soils; but now he, and all the great Rose men, stick more to what suits them best in pots, and having failed that way, and knowing of the all but universal failure with others, I want now to return to the practice of times long gone by, and use poor, half peaty soil, or black, sandy soil, and very rich, rotten dung, with leaf-mould, to see whether we may not overcome the difficulty of having Tea Roses in the open ground, as well as other Roses. If the bed for them is on a dry bottom, let it be eighteen inches deep; but if clay, ten inches will be better, and the next six inches below to be of drainage materials; anything, from rough cinders to pebbly stones, such as they mend roads with, and a *rubble* drain in the bottom of all; let this bed be filled with *fresh* top soil, from the poorest common or roadside in the parish, one-half; and let the other half be the richest things that can be put together; very rotten pig-dung or cow-dung, or both mixed with leaf-mould, or any dead mould from vegetable remains, such as the "rotten heap" in the back-yard. If the common from which the turf is cut is of as good peat as Bagshot Common, all the better and safer; then a full spade deep may be taken, so as to get some of the poor, black, sandy parts, which always lie below good surface-peat, to mix with the rest. If the soil of the common is at all brown or yellow it may be sandy enough, but it is not fit for such a bed as I contemplate. I burnt my fingers that way already, and I put great stress on having what you might call bastard peat; but do not go to too much expense with it, rather let us feel our way into it. I am only going to try a couple of yards of it, in a trench eighteen inches wide, in the middle of the

garden, and plant twelve or eighteen kinds of young Tea Roses down the middle. The end of a Celery trench, or a Cabbage row will do, and one-horse cart-load from the common, and three or four barrowfuls of rotten stuff will not hurt any one, who is desirous to have the best Rose for the button-hole throughout the season. Owing to the experiments going on, all the plants in my former experiment beds which the frost did not kill were moved, and all the soil was removed every third year.

Mr. Rivers now says, there is nothing better than a yearly taking up of such Roses as we highly prize; but suppose we say two years, to split the difference, and say that the soil will be replaced; or, at least, a certain quantity of fresh soil be brought in every second year, and the hole for each Rose to be filled with it; then the trouble and expense would not be much. Who knows but the *Cloth of Gold* would flower like a *Noisette*, if all traces of loam was kept from it; and if only one-half the rotten dung that we give to Tea Roses was allowed for it in poor, black, sandy soil, not deep, nor raised above the surface. Unless a raised bed is four feet wide, at the least, I have a certain horror against it for Roses under a wall. I lost dearly by such raised beds, and that made me cry out so lustily against the first Rose-house put up by the Horticultural Society, at Chiswick. This house turned out just as I said it would; and they had to give it up entirely: yet the yellow loam in the beds was good enough for Melons, or Pine Apples. I plumed my feathers much higher than the Society, on the self-same plan, years before them, but I was as completely beaten as ever a man was in this world. My Roses got less and less, till at last you thought they were budded or grafted at the wrong end; and I gave them up in despair, and would have never thought more about them were it not for my autobiography and the Tea Roses at Lady Lambert's.

The best plan for getting a large stock of Tea Roses, without buying so many, is described in the *Gardener's Magazine* for 1830, by Mr. Ellis; and I shall ask the Editor to reprint it as it stands some day; and all that I can add to it is a move which I saw this last summer in the next parish. I was getting up a greenhouse for Captain Whitty, one of the Inspectors of Prisons, from knowing his landlord. His lady is one of the best gardeners of her class I have met with for a long time. I would lay three to one that she would strike Rose cuttings as fast as—who shall I say?—as a Rose-grower anywhere. I thought no small beer of my own doings, when I could make a Rose out of every joint on a shoot, by cuttings; but Mrs. Whitty has “done” me last season; but no matter; all I was going to say is, that she had one *Devoniensis* planted out in a flower-bed last spring; that I saw it at the beginning of May, and sure enough it must have died in two months, for it looked so bad that I advised her to take it up, pot it, and put it into the Cucumber-bed for a while, to get life into it; that I helped to do this, and that, to my surprise, the roots were numerous, and in good order, and I almost regretted the advice I had given. If the head had been cut close to the ground, the roots would make some good shoots in three or four months, but the plant was potted; it was then determined to keep it in the frame for a “stock plant,” to get cuttings from. Now, how many plants should you suppose this lady had struck from this scrubby thing in three months?—I really do not know the number myself, but I think about twenty. I saw lots of them in flower last September, in the new greenhouse, and I was present, and made the first two cuttings myself, about the middle of May; no more than two could be had then, and they had only two joints each, and grown in a heat of 90°. The end of it all is this, that if you put a Tea Rose, or a *Noisette* Rose, or any of the climbing Roses, into a

hotbed early in the spring, *every joint* they make till the middle of May will root, just as freely and as soon as a joint of a Verbena, in silver-sand under a bell-glass; but unless one is much pushed, two joints do with less care; one to cut under and be in the sand, the other to start the shoot, and as soon as that start is two joints long make a cutting of it also, and so on till you have no more room for them. In nine days they ought to root if you take them soft enough, and no matter how soft, when all is over they forget that, and make as good plants as if they were quite ripe when the cuttings were made. D. BEATON.

CHILDREN'S GARDENS, &c.

A HAPPY new year to you all! Before this shines in type, 1854 will have departed, and left many a sad memory to soften and subdue the cheerfulness that otherwise would be felt at such seasons as these, when friend congratulates friend, and neighbour pours forth the warmest wishes for the happiness of neighbour and acquaintances. Many are the feelings of deep-toned gratitude which the review of the past year ought to inspire, as here, in security, we enjoy so many blessings, with the broad banner of civil and religious freedom floating triumphantly over us—none daring to make us afraid, or to interrupt our repose. And yet, thankful as we ought to be that last season our fields were loaded with abundance, what reason that thankfulness should be mingled with the active and the practical in sympathy, because, owing to the stagnation in trade, and the high price of provisions, the pangs of cold and hunger have been felt in many a home. Over sea and land, from the peninsular of the Crimea, has come the elation-shout of victories achieved—telling us, that after a long period of peace there are yet the heroes to assert the right; but, to dim the glory of such triumphs, there are few families that know not of the signs of mourning for the loved and lost; while, at this festive period, the good things we are called to partake of seem altogether out of place, and pall upon the appetite, when the sight of our homeless, worn-out, tattered, mud-covered, and rain- and wind-battered, brave countrymen comes vividly before our mental vision. Nothing but the direst necessity can justify such scenes as these; as, independently of the horrors now, and whatever the ultimate results, the present tendency will be to roll backwards the progression of all that would otherwise have been tending to public reform, to social happiness, and personal advancement in the good and the true.

The high price of the necessaries, and the more generally used comforts of life, together with the additional taxation, the unavoidable consequence of war, will cause some of the most liberal-hearted of the comparatively opulent to curtail their expenditure; and thus, without direct blame being attached to any one, the double misfortunes are produced—a high price of the necessaries of life; and a scarcity of employment, with its low rate of remuneration. Notes have already reached us of contemplated reductions, especially in the higher departments of gardening—those which, perhaps, may be considered more in the light of luxuries than of necessaries. Even, therefore, leaving higher considerations out of view, on the mere selfish principle of our “craft being in danger,” we are forced to look around us for the elements, not alone of present, but of continued and augmented support; and for these purposes, nothing will more serve our interests, and the welfare of the community generally, than laying foundations, broad and deep, in the hearts and minds of the rising race, of the love of the beautiful and the useful in vegetable nature, as a mind-expanding, soul-elevating, spirit-

purifying element; while the uses and benefits of such knowledge would be an ever-present companion, in all circumstances, and in all climes. I am personally acquainted with several instances of emigrants, who practised different trades, who went poverty-stricken to the far-off land of their adoption, and whose first elements of success were owing to their love for gardening and flowers, cherished even from their infantile years.

A great man is reported to have said, that he cared not who made the laws of a country, if he were allowed to write, or had the control over, the popular ballads; sung alike in field and hall; those thrilling words, that have roused to martial deeds of heroism; that have knit heart to heart in unity of purpose, and of aim; that have shed a true moral greatness, approaching the sublime, over the simple annals of the poor; that have shown what, next to stern impossibilities, *Love* could accomplish, when consecrated by purity; and, alas! could also point to the pernicious influence of their choruses—their voice-to-voice swelling echoes—in giving a tone and a currency, and something like the authority of fashion to thoughts and sentiments, that in our retirements we would look upon with loathing abhorrence; so true is it that men will do in the mass, will there allow inroads upon their sense of right, what they would shudder to contemplate in their individual capacity. Much as we owe some of our poets for the glory they have shed over the simplest beauties of nature; it is questionable, if, at such seasons as these, the evil has not counterbalanced the good, by the chorusing chauntings about “filling pint-stoups,” and “not going home till morning,” which, but for the music and the chorusing, would appear extremely silly and simpleton-like. It has lately been a source of much pleasure to find, from the attention paid to Mr. Appleby's essays on self-culture, that, with all that is yet wrong, the temptations to error in this direction are not so strong as in our younger days.

Had I any claim to the title of a philanthropist, and were my powers of acting anything proportionate to my powers of wishing, I would discard the ballad, unless when instrumental in promoting the benevolent and the pure. I would make little boys and girls my especial care. I would strive to sink deep into their tender minds the love of the kind, the beautiful, and the good. I would show them that ill-will, envy, rancour, and malice, always carried with them a rod to punish their unhappy possessors, and that the truest source of happiness, to be really felt within, is just to be always trying to make others happy around them; and as a secondary means for producing this softening of the heart, and this refining and elevating of the feelings, I would take them to field, to meadow, and to garden, and from the beauties of nature glean lessons of generosity and truth. I have a vivid recollection of many a scramble and scratch, with a boy and girl, before I have any recollection of thoroughly knowing the real difference between a p, and a q; but I can also recollect, right well, that when some half-dozen of us used to fill our little pinafores with Buttercups and Daisies, there were no fightings and disputing then; the innocent good-will of paradise seemed, for the time, restored; and, though we knew not how, a sweet, gentle influence seemed to be produced, by our direct contact with the beauteous handiwork of that Being, whom we, with vague, undefined ideas, had been taught to regard as the truly good and kind. Often have I witnessed the exemplification of the same fact in after years, and almost wished either that I was young again, or that the dear flower-gatherers would know but little of the hardship of life. One of my farthest-back recollections places me beside a group of older and younger girls and boys, clustered by the beds in a peasant's garden. Years had passed away

before I could find out what possible connection there could be between “Love lies bleeding,” and bleeding hearts. Some were there who had no soul for the beauty of flowers, and they were dogged, sullen, obstinate; rough and unrefined at school, and through life. Many, who spoke of and examined Mignonette, Wallflowers, Daisies, and Gardener's Garter, as if they really were part of their being, were ever distinguished for generous kindness, more apt to resent an injury to a little boy, or girl, than any unkindness to themselves. Some, who have gone home, have left sweet memories behind them; and one, who still remains not far from the old place, and possessing one of the prettiest working man's garden, and one of the neatest cottages noticed in my last visit to Scotland, from Inverness to Berwick, has also proved, by his conduct in life, that flowers have a teaching as well as a charm.

But grant that it is of great importance that children should study gardening, and be led to love and admire the beauties of nature; cannot they do this sufficiently in the gardens of their parents, and their parents' friends, without all the bother and parade of letting them have gardens of their own? No! this would be a sort of love and sympathy in the aggregate, of which we find plenty of sounding worthless traces in all departments of life. Even philanthropy towards the masses is a cheap and worthless affair, if it grapples not with individual instances of wretchedness. Where there never has been felt a strong admiration for a particular object, there has been but little vibration of sympathy for beautiful objects in general. Besides, rest satisfied with inspiring the love of nature, in the aggregate, and you get no help from the strong impulsive feeling of appropriateness, the having something we can call our own, based on the selfish of our nature though that feeling be. Hence, the girl fondles and pets, and feeds, and prattles to her little sportive kitten, which she could do to no other kitten in catland, because it is *her own*. The boy ranges field and brake for delectable food for *his* bird. He must have a strong motive to do it for any other's sweet warbler. The plant so carefully nursed, sponged, and watered, in some back attic of a crowded city, is not merely a memento of the green fields of other times; it has a charm of its own, it is *mine*. When boys and girls change into youths and maidens, and they of the humbler classes contract, what the political economist mourns over, reckless, imprudent marriages; this strong desire, in the very depths of poverty, to have something we can call *our own*, lies at the bottom of the whole. And before the children of our land can be interested in gardening and flowers, the same appropriating principle must be brought to bear upon them, by giving them gardens, plants, and vegetables, which they can point out to as *theirs*. The mere admirers of a production can know little of the zest which the owner feels, who, with his own brain and hands has worked out the effect.

Besides, the mere looker-on-admirer can realise but few practical benefits. Let us just name a few of these. There is the *habit of industry formed*. The boys and girls that work early in their gardens are not likely to become mere drones in the human hive. THERE IS THE KNOWLEDGE OF WORKING THE SOIL OBTAINED, and that may be most useful hereafter. The labourer will do his work better; the gentleman, who abroad must find a fortune for himself, may look back with pleasure to the hours he spent in a garden; while the wearers even of coronets, who stay at home, will not only sympathise with their work-people, but give one of the best gratifications to a faithful servant,—the consciousness that his employers know, from the amount and quality of his labour, that he has given honest services. *Then, there is the feeling of self-dependance engendered*. The children are to have a pic-nic amongst themselves, and their own gardens,

with a little assistance at first in the cooking, furnish them with the means. Or they give a juvenile party to their friends, and John provides such Cauliflowers as his father says he can seldom see; and James brings such beauties of Peas and Beans; and William has such splendid Potatoes; and Robert brings wondrous Carrots and Turnips; and Peter ushers in a tray of such beautiful fruit; and the much-loved sisters make such garlands and posies from their own parterres; and all goes off with additional distinction, because they had banquetted their friends with the proceeds of their own industry. Depend upon it, these are not the youngsters that will want to be *crutched* in life; they will make elbow-room for themselves, and give it as freely to others; and lastly, for the present, there is an *honourable emulation, and respect for the rights of others, cherished and promoted*. I have long thought that there was no little of evil, as well as of good, in the mere rivalry and emulation produced at school. The clever boy is apt to look down upon the dullish one; while the dull boy is apt to feel envy towards him who gets all the praise and the honour. This is owing greatly to the fact, that education is given in a certain beaten track, and no allowance is made for the peculiar mental powers of the different students. Hence, many of the dunces at school have been the *men* in life.

Now, in the great variety of tastes which may be exhibited in gardens, however small, there may be the keenest rivalry, and yet the absence of all envious feeling. Then, again, until controlled by a stronger principle, it seems to come to us too naturally—the oppression of the weak by the strong; the taking the goods of the simple by the cunning and the crafty. How soon does this manifest itself, even with children and their playthings. When children's gardens are first established, this feeling is apt to manifest itself, and must be kindly yet firmly repressed. Ere long, the moving of the smallest particle from a neighbour's plot would not be thought of for a moment, because there was, in dread perspective, the double punishment—the being treated as an outcast if discovered, and the upbraidings of a wounded self-respect, still more agonising and worse to endure. What better field for teaching the great lessons of *mine* and *thine*, on which the basis and framework of society are founded! There is much truth in the old adage, "The boy is father to the man." The boy who can admire the beauties in a sister's, brother's, or neighbour's little garden, and may thus be roused to industry without a feeling of envy or jealousy, and far less the thought to appropriate what is not his own, will, though his pathway in life be humble, most likely prove a true-hearted, generous man, who, in all his efforts to better his condition, never stooped to look with an evil eye, or a spirit of covetousness, on the more prosperous condition, or the more abundant resources, of his neighbour. If, on the other hand, rank and position should be his fortune, should he even be called upon to take a prominent place in the legislature of his country, and should the lessons thus early instilled in childhood not be obliterated by the conventional polish of Society; however you may differ as to his statesmanship; however distrust his far-seeing sagacity; you never doubt but he acts out his convictions; that no doing evil that good may come; that no trimming to meet the expediency of the hour, will ever be his, nor any thing opposed to the character that even opponents will give him—an honest, right-hearted man.

When I visited Wilderness Park, during the past summer, among other things which I forgot to mention, were a cluster of oblong parallelograms, separated by three-foot walks, part of these being filled solely with vegetables, and the others solely with flowers, and belonging to, and cultivated *wholly* by, the elder branches of the family. There were other plots, entirely for

flowers, belonging to the younger scions of the noble house, at another place; as they had not yet acquired the necessary strength to work among the vegetables. Beside these larger groups, there were conveniences for tools, that wanted enlarging, for not even the semblance of a slight should be given in such cases as these; and near at hand, was a consecrated-to-fond memories ground, where deceased pets of rabbits, doves, and other animals had been affectionately interred. Were it not intruding upon privacy, the doings with these vegetables and flowers would furnish, no doubt, many a pleasing and profitable theme. Some time ago, my friend, Mr. Fraser, wrote me on the subject, and with an extract from his letter, I conclude this rather rambling new year's communication:—

"I think you should say something about children's gardens. Those which you noticed here, are set apart for vegetables and flowers separately; each one of the elder branches of the family having a bed for each, fourteen feet by nine feet. The vegetable bed is filled with Peas, Beans, Potatoes, Cabbage, Lettuce, Cauliflowers, &c. The flower-beds have each a standard *Rose* in the centre; and then everything that can be got—Sweet Peas, Salvias, Ageratums, Stocks, Fuchsias, Mignonne, Candy Tuft, Virginia Stock, &c., &c. Where there is a family of children, none of them, after they are four or five years of age, should be without a flower bed or two. This not only creates a love for gardening and flowers, but leads to habits of industry and good order. These are matters which parents and teachers ought to do more to encourage. Much may be said in favour of such gardens, and nothing at all against them. It is really surprising how soon a child will learn, and recollect the names of flowers. Even my little girls, the oldest of which is little more than four years of age, knows the name of every plant in the little plot in front of my cottage."

I shall not be sorry if this new year be marked by something like family resolutions; papas and mammas being thoroughly besieged for ground, spades, rakes, and hoes, instruments rather more useful and peace-speaking than popguns, drums, bows and arrows. To encourage my young friends to make a vigorous, though respectful attack, I will mention two facts. First, that children thus indulged, and right directed, may, as a general principle, have free access to a gentleman's demesne without any dread of consequences. The second is, that at a much younger age than that mentioned by Mr. Fraser, flowers have a charm for the infantile mind. I have often noticed children, before they had got into their teens, talking to, and gently touching, but never hurting, or pulling favourite flowers. Ah there was a sympathy that entwined and united *such flowers*. Would that we could understand the flower language, thus breathing of innocence and peace, the outfoldings of the tender human blossom, when holding sweet communings with the beautiful. R. FISH.

THE MANGOSTEEN, VICTORIA LILY, AND OTHER NOTES MADE AT SION HOUSE.

I FIND my notes are becoming so numerous, that it is high time I reduce them into shape, and place them before the readers of THE COTTAGE GARDENER. I very often visit gardens, and whenever I see any new plant in flower, any new fruit in bearing, any new mode of heating, or any old things put in new form, I immediately jot it down in my note book, and when the number of such items has increased sufficiently to fill a sheet, I shall take an opportunity (as I am doing now) to write them out, and send them to our Editor.

I was very lately at Sion House, Isleworth, the re-

sidence of the Duke of Northumberland. This place has been for many years famous for gardening, and for a fine collection of rare hardy trees and shrubs, but more especially for a curvilinear exotic stove-house, in which are cultivated tropical fruits, bearing shrubs, and trees. The late Duke had quite a passion for this particular branch of horticulture, and spared no expense in procuring plants of every kind of fruit from the warmest regions of the earth. Many of these have already borne fruit, and have been exhibited by his successful gardener, Mr. Iveson, at the Metropolitan exhibitions, surprising very much the visitors to these shows by their singular forms. Such fruits as the Papavo, the Vanilla, the Nutmeg, the Guava, and the Rose-Apple; but the most desired of all, the *Mangosteen*, and the *Durion*, had not produced any fruit till this year, or rather autumn. The former, the Mangosteen, showed flowers then, and has set some fruit, which I saw. The Durion trees are but small, and, probably, will not fruit for some time yet.

This Mangosteen, which is the native name, is the *Garcinia Mangostana* of Linnæus, and is a native of the Molucca Islands, in the East Indies. It is a tree rising twenty feet high, with a stem gradually tapering, and branches that regularly lessen in length towards the top; hence it forms a very handsome tree. The leaves are oval, seven or eight inches long, strongly nerved, and of a rich dark green. The flower has a resemblance to a small single rose. The fruit, when fully grown, is the size of a middling Orange; the shell like that of the Pomegranate, the inside of a rose colour, divided by thin partitions like the Orange. These divisions are filled with a soft juicy pulp, of a delicious flavour, akin to that of the Grape and the Strawberry combined.

This tree is named in honour of Dr. Garcia, who says, in the "Philosophical Transactions,"—"That it is esteemed the most delicious of the East Indian fruits, and a great deal of it may be eaten without any harm, and it is the only fruit that sick people are allowed to eat without scruple." Dr. Solander, in the last stage of a putrid fever, in Batavia, found himself insensibly recovering, by sucking this delicious and refreshing fruit. The pulp has a happy mixture of the tart and the sweet, and is no less salutary than pleasant.

This excellent fruit is, as I stated above, now swelling off in the tropical fruit-stove at Sion House. It is the first time it has fruited in Europe. It is growing in a large box, plunged in the soil, with about a foot of charcoal all round the box. This charcoal, Mr. Iveson informed me, was frequently watered, to yield atmospheric moisture. There are three or four other trees of the same kind in the house, but not yet in fruit. This tropical exotic house is divided into three. In a separate one is another large tree of the Mangosteen, much larger, more thickly branched, and with smaller leaves. It has not fruited, and probably is a variety that is shy to fruit. This variety may be the kind that has been hitherto cultivated in other places, without success, in producing its fruit. If this be the fact, of which I have little doubt, we may now look forward to the day when Mangosteens will be as easily and as plentifully grown and fruited in our hothouses as the Pine-apple. Great credit is due to Mr. Iveson for his successful method of bringing this fine fruit of eastern climes into a bearing state. The temperature that it requires is not above reach, for the thermometer indicated only 72°, yet the trees were evidently in a growing state.

To ensure having plants of the fruit-bearing variety, they should be propagated by cuttings or grafts from such fruitful trees.

In the same houses, I noticed the Chocolate tree, *Theobroma cacao*, showing abundance of fruit-buds. They are produced on the trunk of the tree! and in that respect are a very great curiosity. The far-famed

Nutmeg, *Myristica moschata*, was in fruit. This tree has been in fruit here for a long time. The tree is about twelve feet high. The fruit is about the size of a Burgundy Pear, and, when ripe, splits open, and shows the nut enclosed in an arillus or stringy covering, which is the mace. So that the tree produces in one fruit both the Nutmeg and the Mace of commerce.

Besides these, the Coffee-tree was in fruit, the berries having some resemblance to ripe Chories; and the Vanilla plant had several bunches of its perfume-bearing fruit; and the Papaw was in flower.

In the range of houses now devoted to the Vine, the Peach and the Fig, in some of which formerly the Pine-apple was cultivated, one house is devoted entirely to the *Musa Cavendishii*, the plants of which were imported. Amongst them is a very superior variety, confined, I was informed, entirely to these gardens. Its superiority consists in a more juicy and more highly-flavoured fruit. There are several large fruiting plants, but the good variety cannot be distinguished by either habit or foliage. As they fruit, the inferior variety will be thrown away, and the good one only propagated.

In the *Victoria Lily* house, a young plant was progressing freely, having already five leaves, with young ones springing up from the root. We had a little discussion on the utility of a wheel kept in motion by a small stream of water, part of the wheel being within the tank in which the plant was growing. Mr. Iveson is of opinion, and that is borne out by experience, that the continuous motion has a tendency to keep the water sweet, and prevents the growth of confervæ on the surface. Whenever the wheel was stopped, either by accident or design, the surface of the water immediately was covered with a dirty-looking scum, a species of confervæ. Let every grower of the *Victoria* prove whether Mr. Iveson is right.

The *Victoria* House is at the end of a house filled with good specimens of New Holland plants. In passing through it, I saw several strong plants of *Tropæolum tricolorum*, and of its variety, *Jauatti*, making already great progress. I was struck with a newly-invented trainee or support for them. Mr. Iveson said it was the invention of one of his young men. It is simple and natural, and anybody may make it. First, procure an upright, round staff, about as thick as a man's thumb. It may either be made of deal, turned round, and painted, or of a Hazel, or Larch-rod; if of either of the latter, all the branches should be cut clean off. The end to go into the soil should be sharpened and the top cut off horizontally, holes should then be bored pretty thickly all the way up the rod, and one in the centre at the top. After that is done, procure a quantity of small, twiggy spray, or branches of Hazel, or Birch, or Beach, sharpen the thick end, and thrust one branch into each hole; contrive the length of the twigs, so that the longest will be at the base, and gradually let them shorten up to the top; then put a larger bushy twig in the hole at the top, and you have a mimic tree; a very natural and elegant support for this beautiful climber. Let every young aspiring gardener try his hand at forming one. Against a south wall in the garden my attention was drawn to some *Vines in pots*, intended to fruit next year. They were fully as thick as my middle finger, and, at least, from seven to eight feet long. These strong Vines, capable of bearing from six to ten bunches of Grapes, were all struck from eyes last March. The growth had been encouraged, of course, by frequent repotting, and a free use of manure-water, with a good heat, and space to ripen the wood. I noticed they had been stopped twice to give them strength. The wood was well ripened, and the buds prominent, so that a crop of good fruit may be confidently predicted.

In the fruit garden there is a number of pits which were used when Pine-Apples were grown for succession.

Mr. Iveson now uses some of them for forcing *Strawberries*. He fills them quite full of leaves, and plunges the pots of Strawberry plants in them. The leaves soon sink, and then the glass is put on. The plants root through the holes in the pots, and thereby gather up a large store of nutriment, which swells off the fruit quite equal to any grown in the open air in the natural season. Whoever has spare pit, plenty of leaves, and good Strawberry plants in pots, would do well to try this plan.

There is at Sion House a very noble architectural conservatory, forming a segment of a large circle. The centre is a lofty dome, with a stove-house on each side and a greenhouse on each side; beyond them, the whole finished by a square, lofty house at each end. To walk through them is quite a promenade. At this time of the year, the greatest attraction is the *Chrysanthemums*. I saw many fine, bushy specimens, both of the large varieties and the Pompones. Certainly, these autumnal ornaments of the greenhouse are worthy of every attention during the summer to grow them into good plants that will produce such a blaze of flowers as I saw at Sion. In the central lofty-domed house, a specimen of the *Bamboo* of the Indies was pointed out to me, that had in one season run up nearly to the top of the dome—a growth of fully fifty feet—in the short space of eight months. The stem at the base was about as thick as my arm; it was as smooth as glass, and of a beautiful light green. I considered it one of the greatest wonders of rapid vegetable growth that was ever seen. In this central house there are some noble Palm-trees, some of which were bearing fruit.

Behind this noble conservatory there is a range of low houses, which Mr. Iveson uses as nurseries to supply the great conservatory. Here I noted several good things in flower, or coming into flower, such as *Begonias*, *Gesneras*, *Eranthemums*, &c.; but the most remarkable plants were several pots of the bulbous *Bletias*, such as *Shepherdii*, *verecunda* and *hyacinthina*. The pots were full of large bulbs, and from each there sprang several flower-stems. It is a remarkable fact, that these flower-stems do not grow out from amongst the leaves, but spring out of one side, or sides, of the bulb itself. These species of *Bletia* have all purple or purplish-crimson flowers; but there had, by some means unknown, a bulb got into one of the pots that produced white flowers; the species I cannot detect in any botanical work.

I find my notes on these gardens have filled up all my space, so I must reserve the remainder for another opportunity.

T. APPLEBY.

NOTES ON THE CUCUMBER.

In spite of the hard weather which often ushers in "the new year," there is always something inspiring at the commencement of another season. The "dull, dark days," which usually characterize December, gradually give way before the new year to a much clearer atmosphere; and with the increasing length of day light, a greater proportion of sunshine may be expected than those that precede Christmas. Consequently, the forcing gardener must take due advantage of these things, and having the prospect of obtaining a greater share than hitherto of one of the most important agents in the forcing way, "sunshine," he must be sure and avail himself of it to the best advantage; while to the amateur, and those whose practice does not embrace anything very extensive, the new year forms a sort of era, when they begin some of these works, which they, with perfect propriety, term "forcing," this being about the time when those who have not many forcing pits artificially heated begin to start their Cucumbers for spring use;

and though there are some who manage to carry through young plants reared in October, it is rare to obtain these without the aid of fire heat, in some shape or other; and many, not having such a structure at liberty, it becomes a matter of importance to have them as early as possible by other means within reach.

Before the use of hot-water, and its application as a means of communicating bottom-heat as well, was known, a Cucumber at Christmas, or rather in February, was one of these extreme rarities which but a very few, or none, ever thought of. Latterly, however, they have been very plentiful, and those who have the means of commanding a steady heat of 60° or 70°, have no difficulty in carrying their plants through the winter, and in a bearing state, too, although it must be confessed, that in the dead months of winter the progress is slow, and it is not unusual for disease of some sort or other to attack them. Mildew being one of the most fatal, and the highly artificial condition of the plant at the time, renders great caution necessary to check or counteract this pest, for the plant cannot withstand such an ordeal as it would in April. Carefully watching its approach, and covering the heating apparatus with sulphur, will, in a manner, stop it; but not always without injury to the foliage; but (when the first speck of it shows itself) a slight dusting of the black sulphur will usually check it at the expense, perhaps, of the leaf on which the operation is made; it is, therefore, better not to adopt this plan if it can be done without. Another remedy of the same kind, perhaps more fatal to the foliage, is to slightly wet the affected part with a sponge dipped in lime water; this generally arrests the pest for a time, but it must be closely watched, otherwise its rapid strides renders the plant useless. I have heard that a slight solution of salt and water is a more perfect cure than anything; but I never tried it on winter Cucumbers, neither do I think that they would endure the ordeal; for plants in that delicate state which Cucumbers are at a season directly at variance with the one nature intended them to have, must be very sensitive to such trials as is necessary to overcome a disease which is brought on solely by the weakness or inability of the plant to resist it. However, we will leave this subject, and enter on the cultivation of young plants, which may be said to have their commencement with the current year.

In my younger days, and, I believe, some time before that, the rearing and forwarding of Cucumber plants was one of the most important branches of the profession; and to cut the first Cucumber of the season was no small honour amongst neighbouring cultivators; this emulation, I believe, helped materially to lay the foundation of those provincial horticultural shows which sprang up at the time, and which, in after years, evinced considerable influence on the cultivation of certain things at that time. Now, to obtain early Cucumbers with dung-heat alone (for little else was thought of then), the process was the same precisely as what is now practised, where the same working material is in use, which is, to prepare a quantity of hot dung, by making it into a heap, and then turning it every other day, for a few times; then it might remain three or four days between the turnings, and eventually the fiery heat will be so far subdued, that it may be made into a bed at once, in which may be placed the seed-pots, which require no particular care until the plants shew themselves, when they must be placed near the glass, if possible, at the same time, taking care that they are furnished with the necessary bottom-heat, which may be done by adding some more of the openest of the heating substance inside the frame, and plunging the pots inside of that; this is easily accomplished, only care must be taken to introduce nothing likely to be infected with anything of insect life, and to avoid that, it is good practice to pour

boiling water over it before it is put in, and a little boiling water poured all over the frame is a useful thing, too, taking care that none of it touches the pots or plants, if there be any in. I prefer hot-water to any mixture; for lino-water, or, it might be, salt-water, leaves a something unpleasant behind it, I always thought; and just as the young plants are germinating is the difficult time, for the insects that not unusually abound in or about the outside of a quantity of fermenting dung, prove very formidable enemies to the delicate young plant.

Now, instead of waiting to have the dung nicely tempered, as we may call it, before sowing the seed, it is not bad practice to sow a few pots at once, when the "tempering process" begins, and to plunge these pots on the top of the heap, covering them up with anything that is handy, the warmth furnished by the dung starts the seed into life; and if sufficient care be taken in turning the dung heap to transfer the pots from one part of it to the other—without their losing heat, and getting "a chill,"—the process of seed-bed making may be much shortened, or, rather, the plant will be considerably advanced, ere it find a place there, and the dung-heap be spared likewise; but it must be observed, that in this homely practice, care must be taken to prevent the pots with the germinating seeds from getting cold again, otherwise the result will be unsatisfactory; for, be it remembered, the whole plant is in that highly artificial state, that it is susceptible of every change it has to undergo, and a very little variation will render it useless entirely; however, where dung is scarce, this first process may be adopted, taking care to have the "seed-bed" ready by the time the cotyledons begin to expand, and to have it possessed of that genial warmth which, under the significant term of "nice sweet heat," is the only medium in which a delicate seedling plant, like the Cucumber, will live and thrive in the month of January.

In speaking of the bed in which we now have our young plants as the "seed-bed," I believe I ought more properly to have said "nursery-bed;" for the young plants are supposed to be grown here for a little time, and then turned out into their fruiting-bed, but the potting process intervenes before that, or, rather, it takes place while the plants are here; but the process is not attended with any difficulty. A quantity of soil that has been much exposed to the frost, but afterwards taken in-doors in a dry state, is prepared, by mixing a little leaf-mould with it; the worms, &c., being carefully picked out of it; a quantity of this being put into a large pot, and a quantity of small pots of the kind called 48's, with the necessary drainage, is put into the frame; also, some twenty-four hours before they are wanted, to allow them to be thoroughly well warmed; the pots, of course, being perfectly clean; then, when the seedlings have fully opened their cotyledons, and just showing a rough leaf, which is their third one, and probably have run up with a slender stem the length of a man's finger, it is then time to see about potting them, which is done by the operator taking advantage of a fine day, and opening the glass no further than just to allow his arms in, he must lift the plants carefully out of the seed pots with a little bit of all attached to each, and insert them in the other pots, rather deeply in the pot, but not filling the pot for a day or two. I generally place them in pairs opposite each other, and adding no more soil than is sufficient to cover the roots, and giving a little water, I leave them for a day or so, when, if they have not suffered by the change, which they ought not to do, I gently bend them down, and lay a little open turfy substance on and around the stems, leaving the head out, of course; this I do to get rid of the long, useless stem; at the same time, in doing so, I take care that they are not wounded by the process. A little water may be given at the same time, or rather at the time of

potting, which must also be heated to 70°, or so; but I must defer the remainder until another time.

J. ROBSON.

"DON'T KNOW HOW TO SHANK."

THE above was an expression applied to a particular kind of Vine, but a very few years since, when it was advertised, to draw public attention to it; since when, I have seen it published with reference to another Vine. How ridiculous such an application is! Does a plant know any thing? I have been astonished to find men of capacity and intelligence willing to apply such terms to inanimate objects, which we are well aware possess neither instinct nor reason; and on asking myself the reason, I feel obliged to conclude it is improper to do so; which leads me to fancy, that if some of the genuine friends of Horticulture do not place some obstacle in the way, and prevent such a "ball of pragmaty" from rolling too far—science, as a reality, must eventually be a sufferer, and common honesty will have to deplore it.

Should any person go into a stable where a number of horses are generally kept, either for racing, for breeding, or for sale, he will there hear a style of language called "Flash," which I defy a "novice" to understand at first hearing. Horse-jockies and grooms use this "flash style of language," comprehensible only to themselves and to those who are willing to prostitute themselves to the level of the speakers, "pro tem.," for the sake of hearing them; and so fraught with deception and falsehood is that language, which is in a great measure "ironical," that woe be to the individual who is willing to lend them his faith for however short a space of time; they mystify the reality with their ironical cloaks, in such a manner as often to deceive one another, and he who can do this the most effectually is considered the "botter man." It is abhorrent to a sane mind to think that men should condescend to so low a level; but knowing such to be the case, and what the men generally are who are in the daily practice of such condescension, I, for one, insist upon its being scouted amongst horticulturists.

With reference to the particular plants (two I find advertised by different gentlemen, who have both had much experience, and we cannot thank for the introduction of such a "trashy expression,") to which this term has been applied. I do not doubt but that they are plants of vigorous habit, and that their vigour will have a tendency to prevent their berries from shanking off the bunches. And this recommendation, put forward with their names in public print, would be a much greater inducement to any lady or gentleman wishing to purchase, than the use of the above unmeaning expression, tending to specify that the plants possess an amount of ignorance or knowledge. But, again, time must be the test. Should it be hereafter proved that those particular kinds of Vines do sometimes shank in unfavourable situations, which is not impossible, then odium will, as a matter of course, be heaped on the heads of those who have been so sanguine in specifying they would not. "Hold hard! and make fast when you can," is my motto; but it is morally impossible for any man to prevent an accident occurring to a crop which he never had, nor has at the time being, any connection with. The best of Vines may be planted in a border formed on the surface of a wet, clayey bottom, without its being properly drained, and what, I would ask, will prevent the berries from shanking off, when or before colouring, if the roots get into this bottom? The plants may thrive and grow, as long as there is sufficient moisture in the border on the surface; but as soon as that becomes dry, and the bottom roots are appealed to by the plant, the berries must go. What is to prevent it? Nothing! I know this evil may be remedied; but I speak of the evil, and of it in a positive, existing state, and as it must occur to all Vines under the particular circumstances to which I allude, whatever name they may be called by.

If the lovers of horticulture as a science and the trade, generally, do not oppose themselves to such an exaggerated and paltry style of language being used in the recommendation of particular plants to their notice, they must eventually expect to hear of "Pear and Apple-trees which do not know how to canker." Of "Plum-trees which perfectly understand

the propriety of bearing an abundant crop every season." Of "varieties of Apples," having "no truck" with the American blight. Of "Strawberries which can cultivate themselves." Of the "Quatre à la livre" Cherry being a reality; and of "Gooseberries" which try to grow each fruit "four ounces in weight." How very absurd it would be to pay any attention to such ridiculous nonsense! and I think the sooner the introduction of such absurdity is stayed, and the individuals who have played the part of Ciceroes to it are obliged to relinquish it (whether it be done for gratification or for gain), the better. I would recommend their customers to wait, and see their pretensions corroborated, and that the objects of them do really possess some claim upon their attention. Plants do not possess any knowledge or power of discrimination. They are objects controlled by the circumstances and influences which surround them, and of which we cannot be positive of anything in relation to, without having the positive evidence of "ocular proof" before us. We can calculate, from experience, on the probable results of our associations, but we are no more certain of them than we are of "life" itself. Sowing a seed may produce a plant; grafting a scion may produce a tree; pruning and training may, and often does, improve trees, both as to growth and produce. There is a probable certainty that all these operations, carefully and scientifically performed, being productive of the desired results; but asserting that "a Vine does not know how to shank" is an absurdity. A Vine knows nothing any more than any other inanimate object. There is nothing tends to prove the supremacy of man over the rest of the creation more than trees and plants; and man, being the possessor of so bounteous a gift as that supremacy, should use it with reason, and not abuse it, or woe betide him if I come across his path. Unshackled by any desire for pomp or glory; unbound by any ties of personal interest; sincerely loving the truth, and that truth expressed in the plainest language reason and intelligence can dictate; I am prepared to subjugate prejudice, to overturn error, and to capsize all the frivolous humbug, and the paraphernalia which attends pragmatismal pretension, without regard to individuals, when and wherever I may have an opportunity of so doing, without self-compromise.—C. B. S. Jersey.

A NEW KIND OF DOMESTIC FOWL.



"In October last, I saw, in Falmouth, a fowl, which was brought about three weeks before from Bessarabia, and is now in possession of Mr. Olive, a watchmaker in that town. As I do not see anything like it described in any works on poultry, I take the liberty of sending the accompanying sketch and description.

"The size of the male bird was about equal to that of the Hamburgh; colour, silver-spangled. The base of the upper mandible is covered by a cere, there is no comb, but from the crown of the head spring two horns about three inches long; the hackles of the neck are very long and silky, having the webs for about two-thirds of their length disconnected; the legs, short, rough, but not feathered.

"The female which accompanies it has no horns, but a topknot, and small double comb, is of a cinereous colour, and feathered tarsi.

"The horns are of the colour and consistence of spurs, attached to the scalp only; cere, bells, and crown of head blood red; cheek whitish; iris yellow.

"The captain who imported them says that they are not uncommon, though scarce enough to fetch a fancy price in the country.—FRANCIS WRIGHT, *Vicarage, Penar Aworthel.*"

ANOTHER EXAMPLE FOR YOUNG GARDENERS.

I KNOW of no weekly visitor I receive with so much pleasure as you, COTTAGE GARDENER. I look for the time of its arrival with great anxiety, and never have been so much amused and edified as I have been lately, in reading the Autobiography of Mr. Beaton, and his well-timed remarks on the climate in the Crimea, which every Englishman is now looking to with anxiety.

The valuable instruction your COTTAGE GARDENER contains, I think, cannot be found in any other publication of the day. I have shown it to many of my friends who had never seen it before; they have been so well pleased with it as to become subscribers. The valuable advice given by Mr. Appleby to young gardeners will be appreciated by all who take any interest in gardening.

It has been my lot not only to look after a garden, but to superintend woodlands and plantations; also a small farm, with a quantity of poultry; and such is the valuable aid I have derived from the able conductors of THE COTTAGE GARDENER, I can no longer withhold my pen from paper in returning thanks for its valuable information. I was much pleased with Mr. Bencroft's remarks last week. I think we must be of somewhat kindred spirits; for it so happens, I take in the same works he speaks of, and have acted on the same principles he does, and find, after fifteen years teetotalism, I have been able to purchase a good library of my own, with every other comfort. I am often grieved to see some of my own age, who set out in life with much brighter prospects than myself, a disgrace to themselves, and useless to society, through the effects of intemperance. I was highly gratified to find, in Mr. Beaton's account of Mr. Sinclair, that even the Crimea had a teetotaler; and well would it be for many young gardeners if they had a little more self-denial; for they would then be able to get books of instruction according to their wants, without finding their purse anything the lighter.—EDWD. CORNELIUS, *Kelly.*

HEATING FIVE HOUSES BY ONE BOILER.

SEEING a question put by J. S. L., in your number for November 21st, respecting the heating of a horticultural structure, consisting of five houses, to be all heated together with top and bottom-heat, or separately with bottom-heat alone; and having learned that a gentleman at Rotherham had a range, of a similar description, heated in a most effectual manner, induced me to go down to see it, and, I think, I may safely say, that I saw there a master-piece of heating.

There are five houses, and, as far as I could judge, nearly as long as those described by J. S. L., and they can be all heated together with top and bottom-heat, or with bottom-heat alone, and each house can be heated *separately* with or without top-heat.

Mr. Gibbs, the gardener, very politely shewed me through the whole range; the first I went into was heated with top and bottom-heat, and most congenial it was; there were Cucumbers growing in the greatest luxuriance; the second was cold, and full of plants and flowers, Geraniums, Chrysanthemums, &c.; the third, ditto; the fourth, heated with top and bottom-heat, with a bed of succession Pines in a most flourishing condition; the fifth was heated the same, with a bed of fruiting Pines looking equally well; the whole range is heated by two of Pannel's apparatuses, both connected, so that when the season advances it can all be

heated by one alone, or, in case of accident, one is at all times available. The circulation is regulated by means of stop-cocks, and is perfectly under the control of the gardener; and the rapidity with which it circulates through small pipes (one-inch), by which it is connected with the four-inch pipes, is very rapid indeed. I consider it a most ingenious and efficient mode of heating.—HENRY BARNES, *Park Hall, Chesterfield.*

DESTROYING INSECTS AND MILDEW ON TREES.

I saw, in your number of the 12th of December, the corrosive sublimate recommended against mildew on wall-trees, as well as against insects. As the writer is not aware what quantity of corrosive sublimate should be used to a given quantity of water, I would recommend a more definite remedy to those that are much troubled with mildew, Green-fly, and other insects, on their trees, both in and out-of-doors. Let them wash their trees well with these ingredients, and they will find it a great preservation to their fruit-trees, keeping them free from insects of all kind, especially Red Spider from their Vines.

1 lb. of tobacco.

1 lb. of black soap.

1 lb. of sulphur flowers.

$\frac{1}{2}$ lb. of glue.

2 ozs. nux vomica in powder.

1 gill spirit of turpentine.

Mix in two Scotch pints of water (equal to nearly six English pints); boil half-an-hour, and apply it to the Vines or trees milk warm. If you find room for this recipe, perhaps it may be of some use to those that are infested with the mildew, Green-fly, and Red Spider. I have used it myself for some years, and I never found it to fail with me.—B. W.

QUERIES AND ANSWERS.

GARDENING.

ORCHARD-HOUSE FACING THE WEST.

"I wish to erect an Orchard-house, and should much prefer a span-roof. The situation of my ground makes it impossible to make the house run south and north without cutting my garden into shreds and patches, and I shall be obliged by your opinion as to whether a span-roof will suit, where the house must run either south-east and north-west, or south-west and north-east, either of which situations I can give it. Please to answer in THE COTTAGE GARDENER, to—A."

[We have no doubt that the position of your house will answer well. The sun will strike through it from almost every direction, and we should have no hesitation on the subject. We hope you will succeed, even beyond your expectation.]

DRIVING WORMS FROM A BARK-BED.

"I have a hothouse made last spring (heated with flues in the usual way), with a pit for growing Cucumbers; tan for bottom-heat (of course, mould on top) and produced a splendid crop last season. I have now added fresh tan to the old. My plants have been in eight or ten days, and I now find that the soil is quite overrun with worms, and which, I much fear, will injure the plants, and, perhaps, ruin them altogether. I have been afraid of using salt lest I should injure the plants. Can you kindly inform me how I can destroy these worms?—AN OLD SUBSCRIBER."

[Put two handfuls of quick lime in a large pail of water, let it remain until it is quite clear, pour it off, and if it tastes strong, when you apply it to the tip of your tongue, make two pailfuls of it, and see that in addition to being clear, it is of a temperature of about 80°, so as not to hurt the roots of your plants. Wherever that lime-water fairly reaches, your worms will soon be turned into manure. If you should be afraid, and it is a little dangerous, thoroughly to soak the soil at this season, entice your slimy opponents

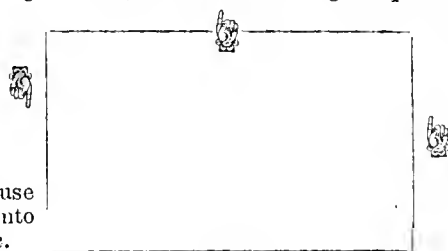
near to the surface, by covering the surface with slates or tiles for a couple of days, and quickly removing them before you apply the lime-water. Several applications may be necessary, before all are reached. Care should be taken to use well aired soil, free from worms, in winter, as they do more harm than in summer.]

A GREENHOUSE AND ITS CLIMBERS.

"I intend building a greenhouse thirty feet long, by fifteen feet wide, by twelve feet six inches high at back, and six feet in front, with lean-to roof, and I write, hoping you will give me your advice relative to a border for climbing plants in it, for which I have a great love; *my difficulty* is, how to arrange the flues so as not to make the border too warm, as I fear would be the case, if I carry the flue under the front shelf, as is generally done.

"I, at present, intend to have a shelf in front, twenty inches to two feet wide; next to that a walk; and then a stage formed of earth or ashes, supported by bricks similar to those described by Mr. Fish (COTTAGE GARDENER, Sept. 26th, 1854).

"I want to be able to keep one end of the house moderately warm in winter, so as to bloom some of my Camellias and Azaleas early. The front aspect will be S.S.E., and, from certain circumstances, the fire-place will have to be made about in the centre of the back-wall, somewhat in the manner of rough sketch, the hands showing the passage



of the draught. I shall be further obliged by a list of the eight or ten best climbers for planting in this house.

"I thank you and your very excellent staff for the enjoyment I have had in trying (and in some respects with considerable success) to carry out their instructions.—H. F. T."

[There can be no objection to any of your arrangements. The flue will answer admirably, and the position you propose will secure you much heat at one end of the house. The stage will save many a watering you would require to give if the plants stood on wood. The climbers are easily managed; plant them in the middle of the house, in proper soil, allowing them to run over the space below your ashes or sand, or better still, in large pots, or little brickbats, so that the roots may be under control; train them with a single stem until they reach the rafter, and then take up or down, right or left, as you please. See an article of last week. The following would suit you:—

Ipomoea Learii at the warm end.

Mandevilla suaveolens.

Passiflora cœrulea racemosa.

" *Colvillii*.

Tacsonia pinnatistipula.

Kennedyia Marryatta.

Hardenbergia Comptoniana.

" *macrophylla*.

Jasminum gracile.]

TREE VIOLET CULTURE.

"Early in November I brought several plants of *Viola arborea* into my greenhouse. In this greenhouse, *Erica gracilis*, *Scabriuscula*, &c., *Correas*, *Tree Carnations*, &c., are flowering, and looking well. I give them free air when the weather permits, and no artificial heat unless necessary.

"The plants of *Viola arborea*, when taken in, were very healthy, and covered with buds, which, instead of expanding, withered, and the plants appear sickly; there is now a fresh succession of buds, but they will, undoubtedly, follow the same course; this disappointment has occurred to me the two last years. I have consulted several friends, but received no advice to meet the case.

"Will you oblige me by a few hints on its culture, to prevent a recurrence of this failure? I need scarcely say how highly I shall value them. The information conveyed in your Journal is always most useful to me. I have learned more from it than from any similar publication.—FANNY."

[If you could have told us of the treatment you had given, we should have been better able to advise you. We presume that as the plants were healthy, and well covered with buds, we could give you no advice as to the culture. There are two causes, which we have noticed, to produce the effect spoken of in well grown plants. The first is, taking up the plants out of a bed, and potting them, and placing them in a house before the pots were filled with roots. The second is, placing them in a rather confined place, without a sufficiency of air. A third cause we have noticed, is keeping the same plant in the same pot for several years, and not giving rich top-dressings. Of course, you give a sufficiency of water, and all the light possible. We should like to hear again, if none of these meet your ease.]

PROMOTING THE GROWTH OF CAMELLIAS—*TECOMA AUSTRALIS*, AND *HOYA CARNOSA*.

"I purchased some Belgium Camellias a month ago. The plants were twelve to fifteen inches high, in four-and-a-half-inch pots, with two or three flower-buds on each. Three of the pots being broken, I repotted the Camellias in five-inch pots, with half sandy loam and half peat compost, (the peat compost, three parts peat, one part manure mixed together a year since.) The flower buds have fallen off the repotted plants, and also some of the others. Seeing your article of 21st November, (on potting either to produce growth or flowers), will you be kind enough to inform me, whether I cannot take advantage of these Camellias not flowering this season, to induce them to make considerable growth, without preventing them from flowering next winter. If so, what size of pots should be used? Will they require bottom-heat, (hotbed)? What degree of heat, and for how long? and should there be any alteration in the potting compost before-mentioned? I should also be much obliged if you would inform me whether *Tecoma Australis* requires the same pruning and treatment as *T. Jasminoides*; and whether it flowers on the old or young wood? Also, whether *Hoya carnosa* will grow and flower in a greenhouse that is only heated sufficiently to keep out the frost, but that has the full sun upon it for the greatest part of the day? I should also be glad to know the name of the plant of which I send a leaf, and whether it requires a warm greenhouse to flourish. The name I had with it was *Jessamy alba*; but as I cannot find that name in the list of Jasmynes, it cannot be the right one. The leaves grow in pairs along the slender branches, and it appears to flower in threes at the end of the branches.—A LOVER OF CAMELLIAS."

[The moving of the plants, and the fresh shifting consequent on the breaking of the pots, will sufficiently account for the falling of the buds. No plant should be fresh shifted as it approaches the flowering state. No doubt your plants will grow freely enough in the greenhouse. The greater heat to which Camellias are often subjected in spring is to cause growth, the setting of the buds, and the consequent blooming to take place sooner than otherwise they would do. Bottom-heat is not desirable for healthy plants. Unless the pots are very full of roots, the next sized pot will be suitable; if very full and vigorous, a second size larger. If you wish to have flowers early next autumn and winter, you may give the plants a temperature of 60° to 65°, in February, March, and April, and when the shoots are made, and the buds set, place the plants out-of-doors. We are not sure of the leaf sent, but think it belongs to *Jasminum Sambac*, and a greenhouse will not suit it all the winter through, unless it is made nearly deciduous. We have had little practice with *Tecoma Australis*, but would treat it much the same as *Jasminoides*; have seen it good from spurs and from young wood, respectively, when the buds were well ripened. The *Hoya carnosa* likes more heat in winter; but we have done it well in a greenhouse. Expose it to every ray of light in autumn; refrain from watering much after September; give scarcely a drop in winter; keep the plant at the warmest end; damp its leaves now and then in sunshine; and by

April and May renew the waterings, and the flowers will make their appearance. The compost for Camellias will do.]

CURING A SMOKING FLUE.—PORTABLE STOVES.

"Being very fond of plants, I have erected a small greenhouse in my back yard, which is at present heated by a flue, but am sadly plagued with the smoke getting inside the house, besides some of my neighbours grumbling at the smoke from the chimney as a nuisance.

"I have seen, at different times, Joyce's and Carman's Patent Stoves advertised in your valuable paper, THE COTTAGE GARDENER. Would one of them suit me? Do both require patent fuel? Would they keep the smoke out of the house? and if so, which is considered the best? Perhaps some of your readers may have tried them, and could give the information.

"I have some double White Camellias, which, a month back, had commenced swelling their buds very nicely; but now every one has dropped off. Would smoke do it? or too much dampness? Standing on the same shelf, I have some variegated ones that have not shed a single bud.—A WORKING MAN, BUT AN ANXIOUS AMATEUR."

[The smoke would not get into your house if the joints of the flue were properly laid in soft well-made lime mortar. Your neighbours would have little reason to grumble if you used broken coke instead of coals; and in either case, keep the burnt fuel forwards, and the fresh fuel behind, and part of the smoke will be consumed before it can reach the chimney-vent. Of course, you have a rise of a foot or so more from the bottom of the furnace to the bottom of the flue. We can give you no encouragement to try any of the stoves to which you refer. Human lungs are sensitive enough; but stoves that will do in a shop or warehouse, we have found ruinous in a shut-up greenhouse. The smoke would injure your *Camellia*-buds; so would extra damp, without a sufficiency of heat and air; so would too many buds being left. We have treated two plants similarly alike, thus far differently:—One was left with buds thick-set, and they nearly all dropped; the other had its buds well thinned, and every one left, bloomed, and expanded in perfection.]

CUTTING DOWN POINSETTIA PULCHERRIMA.—RED SPIDER IN CUCUMBER HOUSE.

"You will oblige by stating in the next Number the best time to cut down *Poinsettia pulcherrima*. One more question; that is on Cucumbers. There is here a stove, and inside, along the back, a narrow border about fifteen inches broad, same in depth, and underneath the soil runs a flue with a tank of water upon it covered with slates. Now, when the Cucumbers were planted they did well for a short time, and then began to die off. They soon were attacked by the Red Spider and Thrip. Should you think it injurious either to Pines or Vines, if I was to paint the wall over with gas-tar, on the back?—J. R."

[You may cut down *Poinsettia pulcherrima* any time after it has done blooming; but we prefer allowing the plants to stand thick together and rather dry until spring. We do not think the roots of Cucumbers are injured by too much heat, in the circumstances, more probably at this season by too little. Sulphur fumes and the syringe are the worst friends the Red Spider has; but if you rub sulphur on the flue, put it at the farthest end of the house, and see that it is not hotter than about 50°, and thence to 60°. We do not think that the gas-tar would injure the Vines in a state of rest, as the fumes would be gone before they broke; but we should not like to try such an experiment with anything living and growing—plant, or animal.]

HINTS ON THE PRESERVATION OF OBJECTS OF NATURAL HISTORY.

(Continued from page 250.)

SKINNING AND PRESERVING BIRDS.

When a bird is killed, stop its mouth and nostrils with tow or cotton. The covering of the seeds of *Gomphocarpus*,

erroneously called the Cotton-plant, and which is so common throughout the colony, is well adapted for this purpose. Tie the bill with a little thread, and plug the shot holes with cotton; this will prevent the blood and liquid matter from soiling the feathers of the head, neck, &c. The bird is then placed on its back, the feathers of the breast and belly are divided right and left, an incision is then made in the skin, commencing from the upper part of the breast-bone till you come to the vent, and with your knife and fingers you may easily detach the skin from the body. If the bird is fat, use a little powdered chalk and fine sand mixed, which will take up the blood or grease, and prevent the feathers from adhering to the body, push the legs up, and separate the thigh-bones, at the knee-joints; cut carefully round them till you come to the rump; divide the vertebræ or back-bone where it joins the root of the tail; be cautious you do not cut through the tail-feathers. Take the body in your left hand, and separate it from the sides; in many birds, the finger-nails are sufficient to do this. As soon as the wing-joints are seen, divide them close to the body; when removed from the trunk, push them back into their right place, and pass on to the neck; draw the skin down gently till you come to the skull, an operation which should be done with great care; raise the membrano which covers the ear holes, and skin down till you come to the lowest extremity of the skull, taking out the eyes; but do not cut the eyelids, as it will destroy the appearance of the head, which, in all stuffed specimens, first attracts attention; cut away the lower or under portion of the skull, and remove the brains; skin the wings to the second, and the legs to the first joints; remove all the flesh from them, and replace it with tow or cotton. Fill the eye-orbits and lower portions of the head with the same; a piece of thread must be then attached to the first joint of the wing-bones, and drawn together as close as they were when removed from the body. This gives the wings a desirable set when turned, a natural appearance when mounted; in some birds, especially Ducks, Geese, &c., the head is so large in comparison with the neck, that it will not admit being drawn through it; in these cases it becomes necessary to make a longitudinal incision in the upper part of the skin of the head, which will allow the skull to pass out; the eyes and fleshy parts may be removed, and the skull anointed, and filled out with cotton or tow; this incision may be neatly stitched together, without leaving any detrimental appearance to the skin. The whole of the inside of the skin must be well anointed with preserving matter, and turned and filled out with tow or cotton, taking care not to stretch the neck too far. Anoint the feet and legs externally, wrap them in a strip of paper, which will prevent their being attacked by insects or mice; the heads and legs of birds should be preserved when no other part can be saved.

The eggs of birds are useful, and easily preserved, by making a hole on one side, and inserting therein a straw or small quill; blow through the quill gently, which will force the contents of the egg out of the same hole; it may then be washed inside with a weak solution of arsenical soap, and dried. It is especially important that the name of the bird, and the locality where obtained, should be attached to each egg, and in cases where the eggs are large enough, these particulars may be written with a pencil upon the egg itself. Eggs may be packed either in wadding or dry saw-dust.

ON PRESERVING REPTILES,—

Such as Crocodiles, Lizards, Ignanas, Snakes, Turtles, and Tortoises.

In skinning Crocodiles, Ignanas, and Lizards, the same plan may be adopted as that recommended under the article of quadrupeds, leaving the skull and leg-bones in, removing the fleshy portions, anointing the skin well, and filling it out with tow or oakum: the feet and mouth should be well anointed externally as well as internally. Snakes must be handled with great caution; care should be used to ascertain, in every instance, whether they are of a poisonous or harmless species, which may be done by opening the mouth, and inspecting the teeth; if they have, like the carpet and diamond snakes, a regular row of teeth on the outer portion of the upper jaw, they are harmless; if, on the other hand, you observe, as in the death-adder, an absence of those teeth, and in their stead two fangs, one on each side of the upper

jaw, the snake is a poisonous one: in all instances, teeth occur in the lower jaw. Make an incision below the throat, separating the neck-bone at its junction with the skull; then peel or cut carefully, and remove the body right down to the tail; anoint the inside of the skin, and turn the right side out; then fill it up with saw-dust or other stuffing matter, taking care not to extend it too much, so as to stretch the skin; small lizards and snakes, together with frogs, &c., are best preserved by putting them into spirits—common wide-mouthed pickle or mustard bottles are well adapted for this purpose. In preserving turtles and tortoises, the under shell should be sawn neatly off, and the interior parts removed, anointing thoroughly: the neck and legs may be filled out with tow, dried, and the lower shell returned to its former position.

ON PRESERVING FISHES.

When a fish is taken, no time should be lost in skinning and preserving it, as decomposition goes on very rapidly in this class of animals, more particularly during our summer months. If the fish is scaly, cover it with tissue-paper or cambric, which will soon dry, and prevent the scales from coming off; if without scales you proceed at once to skin it, which is done by placing the fish on one side, and with a scissors or knife cutting away a portion of the other, sufficiently large to enable you to remove all the fleshy portions of the interior. The skin, when divested of all its flesh, must be wiped dry inside, anointed and filled with tow or cotton. It should then be placed on a soft board, and the fins may be extended by means of pins at each end; great care must be taken not to break or remove any portion of them. If the fish is round or globular, where it becomes necessary to preserve it entire, make an incision underneath the belly, through which the inner portions may be extracted, anointed, and fill in as before. Many fishes have their bodies covered with singular parasitical insects—these should be carefully searched for, especially under the gills, the fins, and eyelids; they should be preserved in spirits, with the name of the fish from which they were taken. It is, also, essential to examine the intestines for worms, which are peculiarly interesting, and may be, likewise, preserved in spirits.

ON THE CAPTURE AND PRESERVATION OF INSECTS.

To catch and preserve the larger species of moths and butterflies, should the insect be on the wing, it is necessary to be provided with a fine gauze net, made in the form of a bag, about three feet deep, sewn round a piece of strong iron wire in the shape of a hoop, which is fastened to the end of a pole about six feet long. Some dexterity and activity are necessary in capturing the flies—when inside the net, secure your insect by claspings the gauze underneath the ring to prevent its escape. If a *thin-bodied* moth or butterfly, squeeze it when it has its wings folded, underneath the thorax, or the part where the organs are attached to the body; this will render it incapable of flight, when it can be shaken out into the hand, and a pin passed through it between the wings, somewhat slanting. If the insect is thick-bodied it requires to be squeezed more forcibly, and in all instances great care must be taken not to injure the plumage of the wings by the fingers, or by allowing the insects to flutter in the net. Should a moth be found reposing in the day-time on the trunk of a tree, or upon a fence or stone wall, the best method is at once to transfix it with a pin, and then squeeze it underneath, taking care to place the pin very close to the insect before you thrust it in, so as to insure a good aim, as the slightest touch beforehand will disturb the creature. Towards the close of the day butterflies may be found settled on twigs or palings; they may be then approached quietly, and taken between the thumb and finger, having previously prepared a pin by which they may be transfixed. When thus secured, they should be pinned into a box lined with cork or into the crown of the hat, (until they can be placed in proper safety) in which a few slices of bottle corks may be glued. The smaller species of moths should be taken in pill-boxes; to capture these, it is advisable to have a smaller net with a handle about eighteen inches long, and a good stout stick for beating trees or bushes where these species are found. When these small insects are captured, they should not be squeezed, but kept in the net by blowing down on them, and seizing the oppor-

tunity as they endeavour to climb or flutter up the sides of the net. The box should be placed over the moth, and the cloth being then held to prevent its escape, the lid should be dexterously brought into its place. When in the house, kill them by means of the fumes of sulphur—six or eight lucifer matches will be sufficient for thirty or forty specimens. Provide a large basin, or vessel of any kind which fits close to the surface of the table; then opening your box a little, just enough to admit the fumes, pile them one on another, until you have sufficient for your basin to cover; then ignite your matches and place them under the basin, until extinguished; close them up tight, and in five minutes or so you will have them all dead; they may then be pinned out at once, as small insects soon become dry. All winged insects, more or less, may be captured and preserved in a similar manner. Butterflies and moths are best obtained by rearing them from the caterpillars, which is done by putting a number of one class into boxes or breeding cages, each about two feet square, with a layer of three or four inches of mould at the bottom, into which many species will descend and transform into the chrysalis—the front and top of each box should be covered with gauze, to admit air; and the boxes kept out-of-doors in a shady place. It is necessary to supply the caterpillars daily with the various plants on which it is feeding. In cases where the food is not abundant, or easily procured, a branch of the plant may be kept fresh for some days by placing it in a small jar of water, and introducing it into the breeding cage.

Many of our rarest night-flying moths, and other insects, may be obtained by smearing the trunks and limbs of trees with patches of a mixture of sugar and rum, and visiting the traps at intervals through the night, where many of them may be taken in an intoxicated state, either settled on the tree, or lying underneath. Another, and very successful, plan is to lay a white table cloth or sheet upon a garden lawn, or an open spot near forest-land; place on it a glass lamp or lantern, choosing a dark, still night; by this means innumerable varieties may be obtained; they may be taken with a small hand-net as they strike the glass of the lamp and fall on the sheet.

Beetles are to be met with in every locality, and at all seasons of the year. Collectors should be provided with wide-mouthed pickle bottles containing a little spirits, into which the beetles may be put as soon as they are caught. Many good beetles may be found by searching under the bark of trees, beneath decayed logs and stones, and on the blossoms of various shrubs and plants. I would suggest a plan of my own, which I have tried with perfect success, for procuring beetles, and also land-shells, in the brushes of this colony, and which may be practised by the settlers with ease. It is as follows: A pair of working bullocks, with yokes and chains, are taken into the brush, and by passing the end of the chain round the dead logs, they are thus easily removed from the spot where they have long lain, and a variety of beetles and other insects, and many singular land-shells, are thus brought to light. By this means, in one day, you can collect what would take many weeks to accomplish by your own personal labour. In larger insects, such as "Animated Straws," and "Painted Ladies," also many of the thick-bodied moths, it is better to remove the inside of the body, anoint it, and fill it out with a little cotton.

HINTS ON DREDGING, AND ON PRESERVING ITS RESULTS.

Description of the Dredge.—The dredge is made of iron, and should not exceed 20lb. in weight. It has a flat, double blade, or scraper, on both sides, bearing slightly outwards, about two feet long, and one foot in width; to this iron frame a fine rope net, or strong canvass bag is attached; the depth of this bag should be about a couple of feet; from the four corners of the frame extend iron rods, or arms which are hinged on the round parts connecting the blades, so as to fold up for convenience of carriage: the arms, when used, are fastened together by a shackle, to which the dredge rope is attached—the length of the arms should be about three feet.

MANAGING THE DREDGE.

Dredging requires some experience, so as to judge of the length of rope to be used; if too much, in a sandy bottom, the dredge will bury itself; if too little, it will not scrape properly. On rocky bottoms the rope must be kept short.

There should always be three or four times as many fathoms of rope out as the water is deep, or you do not fish up the shells which are buried in the sand or mud. In deep water the dredge can only be made to work effectually by placing a weight on the line, which, as a rule, may be about one-third of the weight of the dredge, and placed on the line at about two-thirds the depth of the water; the object is to sink the rope, and counteract the tendency it has to float the dredge. You should have a sieve of copper wire (10 to the inch), and wash the contents of the dredge, by two or three handfuls at a time, over the side of the boat. By this means you will obtain a hundred-fold more than can be obtained by searching in mud or sand in the usual manner. Many small and beautiful objects, with numbers of crabs, star-fish, sea-urchins, worms, corals, zoophytes, algæ, &c., are procured by this means. Mud thus washed often yield good shells and other things; oyster beds and "rubbly" ground are generally prolific. Green grass-like weeds afford slug-like and other animals. All things found in mud beds are good, but they are not numerous; clear sandy bottoms generally produce very little. In our harbours many of the rarer shells are extremely local, and it requires patience and judgment to discover their *habitat*. Examine well the stones and dead shells brought up in the dredge from rubbly ground; they have often small shells and animals sticking to them, or concealed in their holes.

Crabs, lobsters, prawns, and shrimps, should be preserved as follows: the large ones should be soaked in fresh water, until they begin to become offensive to the smell, then drained and dried in the sun; the smaller ones should be put into the strongest spirits you can get. Sea-worms, slugs, and other soft animals should be preserved in Goadby's Solution; this solution is not applicable where bone or shell is present. Star-fishes and sea-urchins, or sea-eggs, with spines to them, may be preserved by being plunged into boiling fresh water for one minute; dry them in an airy place shaded from the sun, but if large and fleshy, plunge them for two or three or four minutes into boiling water, according to their size, and dry them as above. Corals, if large, may be preserved in the usual way by drying, but without any soaking or cleaning: small specimens (or pieces of large specimens) with the flower-like animals of polypus in them, should be preserved in jars or bottles, in the same solution, and the sooner the better. The live parts of coral are at the tips or ends of the branches, or at the water-edges. All sorts of sponges should be preserved; the large ones should be hung up to drain and dry just as they come from the sea; never put them into fresh water, or remove anything that may be attached to them. The line of sea-weed and other matters thrown up along the beaches at high water mark should be carefully examined; numerous and beautiful specimens of sea-weeds, sponges, and other marine plants, and frequently shells, especially after a strong gale, are often to be met with.

All sorts of shells should be preserved, the plain as well as the beautiful. Marine shells are found in the various situations, buried in sand or mud within tide marks, clinging to rocks or stones, hiding in sea-weeds, or for the most part in moderately deep water; in the last-named locality the dredge must be used. Shells should never be put into hot water to remove the fish; they should be placed in boxes and covered round with dry sea-sand, suffering them to remain for several weeks, until the fish have decayed, when they may be thoroughly rinsed in cold fresh water, taking care to preserve the operculum, or "stoppers" of such shells as possess them. Two or three of each sort of shell may be preserved with the animal in them by being pickled in the solution.

FOSSIL BONES.

Fossil bones, more especially those of the *Diprotodon* and other extinct gigantic animals, so plentiful in the creek-beds at Darling Downs and other localities, are very much required, the small bones as well as the large ones.

ARSENICAL SOAP.

Common soap	1lb.
Powdered chalk (whiting)	1lb.
Arsenic	3oz.
Oil of thyme	4oz.

To be worked up with a little water into a paste, and kept in a bottle; it is dissolved in water to about the thickness of milk, and applied with a brush to the article to be preserved.

GOADBY'S SOLUTION.

Alum 2oz.

Bay-salt 4oz.

Water 1 quart.

Sea-water is preferable, and when used should be boiled.

HISTORICAL NOTES ON THE INTRODUCTION OF VARIOUS PLANTS INTO THE AGRICULTURE AND HORTICULTURE OF TUSCANY: a summary of a work entitled *Cenni storici sulla introduzione di varie piante nell'agricoltura ed orticoltura Toscana*. By Dr. Antonio Targioni-Tozzetti. Florence, 1850. — (From the *Horticultural Society's Journal*.)

(Continued from page 212.)

Apples have been believed by some to have been introduced into Italy from Media, and that the Falisci, or inhabitants of Montefiascone, were the first to plant them in rows. But this must apply to some particular variety, not to the species, which we have already stated to be indigenous, but very early cultivated. Pliny enumerates twenty-three varieties, which appear still more difficult to identify with ours than the pears. Among the few that modern authors have recognised, the *Appiani* of the Romans are supposed to be the *Appie* or *Appiole* of the modern Italians, the *Appia pyriformis* to be the *Appiolona lunga*, the *Syriaca ruberrima* to be the red Calvotto, &c. In more modern Tuscany, Micheli, in his above-mentioned manuscript, describes fifty-six sorts under the Medici princes, fifty-two of which are figured by Castello.

The *Quince* (*Pyrus cydonia*), also a European plant and indigenous in Italy, has given rise to much fewer varieties, although equally in cultivation since the days of the ancient Greeks and Romans. Pliny enumerates five only, including, probably, the three principal ones of more modern days, described by Matthioli in the sixteenth century, viz.: 1, the common large apple-shaped quince, *melo cotogna* of the Italians, the best and highest flavoured variety, which is the *mala aurea*, and the *mala cana lanugine* of Virgil, and *mala cotonea* of Pliny, said by him to have been introduced from Crete in the days of Galen; 2, the pear-shaped quince or *peru cotogna*, called by Dioscorides, Galen, and Pliny *Struthium*, which attains to a larger size than any of the others; and 3, the *Milviana* of Pliny, called in Matthioli's days *bastard quince*, probably our wild indigenous variety. The two former, especially the first, may have been originally raised in Palestine, where quinces are common, and were appreciated for their odour in very ancient days, as appears by their mention in the Bible. The golden apples of the garden of the Hesperides have by some been supposed to be quinces, whilst others have with more plausibility referred them to the orange. On the other hand, the nuptial apple prescribed by Solon was evidently the quince and not the lemon. Quinces are at the present day much prized by the peasantry, in some parts of the south of Europe, for perfuming their stores of linen, independent of their consumption for culinary and confectionary purposes.

The *Medlar* (*Mespilus germanica*) is common in the woods of Italy and Sicily, and the assertion of Pliny that it did not exist in Italy at the time of Cato must be erroneous. Theophrastus calls it *setaneios*, as does Dioscorides, who also gives it the names of *mespilou* and *epimelida*, and says that it is a native of Italy. It extends over a great part of Europe, and is cultivated in Italy, though more sparingly and less appreciated than in Germany and England. Besides the common one the Italians have a larger variety, and a small one without stones.

We fully concur with Prof. Targioni in his conviction that the wild *Cherry* (*Prunus cerasus*), common in the woods of Italy and other parts of Europe and Asia, is the mother plant of all the kinds of that fruit now in cultivation, in opposition to many modern botanists, who follow De Candolle in distinguishing four species, *Cerasus avium*, *C. duracina*, *C. Juliana*, and *C. caproniana*, or even go far

beyond him in their multiplication. The species is also evidently indigenous, notwithstanding Pliny's statement that there were no cherries in Italy, before the victory obtained over Mithridates by Lucullus, who was the first to bring cherries to Rome in the year of Rome 680, and that within one hundred and twenty years after that, they were spread over the empire as far as Britain. This statement gave rise to the tale that cherries came originally from Cerasunte, now Zefano, and were therefore called *cerasus* by the Latins. Lucullus may, however, have first imported the cultivated varieties, which the Romans may not have recognised as identical with the wild cherry. In Greece, cherries were certainly known long before his time, for Diphilus Siphnius, according to Athenæus, mentions them under the government of Lysimachus, one of the dukes of Alexander the Great.

Among the numerous varieties of cherries of modern days, Pliny records only eight, of which the *Juliana*, according to Matthioli and Micheli, is the *acquaiola* of modern Italy, and the *cecilian* according to Micheli and Gallesio, is the *viscaloua*, believed to have been brought from Arabia to Spain, and thence to Rome. The varieties known in modern Tuscany are chiefly due to the exertions of the Grand Dukes of the Medici family. Micheli, in the catalogue already quoted, enumerates forty-seven sorts, and Castello has figured ninety-three. The double-flowering variety was first introduced into the gardens of Florence by Giuseppe Benincasa Fiammingo, curator, under Francis I. of Medici, of the botanic garden then called *delle Stalle*, afterwards *dei Semplici*.

The cherry-tree, especially of the *Bigarreau* variety, grows to a very large size; one is recorded on the shores of the gulf of Nicomedia, of which the circumference of the trunk was four-and-a-half braccia (about nine feet), and Prof. Targioni himself had one cut down in his own *podere*, which was beginning to decay, and had a trunk of eight feet in circumference.

The *Plum* (*Prunus domestica*) is said by Prof. Targioni, after the generality of systematic botanists, to be indigenous to the woods of Italy, and an expression is quoted of Pliny's to the same effect, "*sed pruna sylvestria ubique nasci certum est*." But these *pruna sylvestria* must have been the *Sloe* (*Prunus spinosa*). Our garden plums appear, from the investigations of our Indian botanists, to be varieties produced by long cultivation of the *Prunus insititia*, a species common in the mountains of Asia, from the Caucasus to the Eastern Himalaya, but which we have no authentic evidence of being a native of Europe. In all the more accurate European floras, the *P. domestica insititia* are either omitted, or inserted as doubtful natives or escaped from cultivation; or if, in some instances, positive native stations are given for the *P. insititia*, it is generally some variety of the *P. spinosa* that has been mistaken for it.

Several varieties of the garden plum were introduced by the ancient Romans from the East, as we are informed by Pliny, since the days of Cato, who was born two hundred and thirty-two years before the Christian era. Such was, for instance, the *damson* or *damascene plum*, corrupted into *moscine* by the Italians, which came from Damascus in Syria, and was very early cultivated by the Romans. This was probably the early or summer damson, not known in Tuscany in the time of Micheli; but another similar variety, much cultivated in Liguria, the autumn or winter damson was brought there from the East by the Genoese returning from the Crusades. Muratori says that the Italian name for the plum, *Susine*, was derived from Susa in Persia, whence it had been introduced into Italy. But the most ancient Latin name was *prunus*, and with the Greeks *coccyneia*.

Pliny enumerates eleven varieties of plums, amongst which the *cerina*, mentioned also by Virgil and Ovid, is, according to Fée, the *Mirabelle*; the *purpurea* is said to be the *myrobolan*, which, however, cannot be the case, if the latter be, as is supposed, of American origin; and the *damascena* is the summer damson. In Tuscany a considerable number are enumerated as very common, by Matthioli, in the sixteenth century. At a later period, Father Agostino del Riccio mentions several as now since he was young, and amongst them the *myrobolans*, said to be natives of North America. Canon Lorenzo Panciatichi gives the name of eighteen sorts, as common in the seventeenth century; and Micheli has

fifty-two in the above-quoted manuscript list of fruits for the Grand Ducal table, and seventy-three in another of rare plants cultivated in Tuscany.

The *Almond* (*Amygdalus communis*) is said to be really indigenous in several of the floras of the Southern and Eastern Mediterranean regions, including Southern Italy and Sicily, but it is extensively cultivated and grows so readily over the whole of south Europe, that it may, in many instances, have spread from cultivation. It is, however, probably a true native, at least of Crete and Syria. It was well known to the ancients, and is supposed to be the *Sciakedin* of Scripture, sent as a present to Joseph in Egypt, from the land of Canaan. Dioscorides and Galenus speak of its medicinal properties under the name of *Thussia piera*, and *amygdaleas*. Pliny doubts whether almonds were known in Cato's time, because he considers that the last-named writer meant walnuts when speaking of *Greek nuts*, but the majority of commentators agree in referring that name to almonds. In modern days the varieties grown in Southern Europe have become very numerous. Micheli describes ninety-four, but his distinctions are very refined, and taken often from accidental forms; the specimens from which he described them are still preserved in Prof. Targioni's collections.

Pliny, as well as Linnaeus and most modern botanists, includes amongst plums the *Apricot* (*Prunus armeniaca*), a tree most extensively cultivated, and which sows itself very readily in cultivated grounds over South-eastern Europe, Western Asia, and East India, but its native country is very uncertain. Targioni says, on the authority of Reyner, an Egyptian traveller, that it is of African origin, but does not give the precise locality, and we have neither seen nor heard of any really wild specimens. The ancients called it *Armeniaca*, as having been brought from Armenia into Italy, where it is not indigenous; also *præcoca*, *præcoqua*, and *præcocca*; and under one or other of these names it is mentioned by Dioscorides, by Galen, by Columella (who is the first who speaks of its cultivation), by Pliny (who, about ten years after Columella, asserts that it had been introduced into Rome thirty years), by Martial, &c. Democritus and Diophanes give it the name of *bericocca*, analogous to the Arabian *berkac* and *berikhach*, the probable origin of the Italian names of *bacocca*, *albicocca*, and even, according to Cesalpino, *barracocca*; and, lastly, Paolo Egineta, according to Matthioli, has spoken of these fruits under the name of *doracia*. Although some of these names, even in modern times, have been occasionally misapplied to a variety of peach, yet they all properly designate the apricot, and show that that fruit was known in very remote times. Having never been much appreciated, except for its odour, there was not in former days any great propagation of varieties of it. Micheli, however, under the Medicis, enumerates thirteen among the fruits cultivated for the table of Cosmo III.

The *Peach* (*Amygdalus persica*) is, according to the the common opinion, of Persian origin. Diodorus Siculus says that it was carried from Persia into Egypt during the time that Cambyzes ruled over that country. It is supposed to have been transported from thence into Greece, and, after a lapse of time, into Italy, where it only began to be known about twenty years before the birth of Pliny, that is, about seven years before the Christian era, and it appears that Columella was the first to treat of its cultivation there. According to Nicander it was brought to Greece by the agency of Perseus from Cepheia, a locality affirmed by some to have been in Persia, by others in Æthiopia, or in Chaldea. The peach is also spoken of by Theophrastus, Dioscorides, and other Greek writers. We must therefore conclude that this fruit was well known in the East very long before its introduction into Italy. Many ancient writers, including Athenæus and Pliny, and some more recent ones, as, for instance, Marcellus Virgilius, in his Commentaries on Dioscorides, confound the peach with the *persea*, a fruit the identity of which is uncertain, some supposing it to be a *Cordia*, others a *Balanites*. Macrobius again confounds the *persicum* of Senevius, which is the walnut, and with that of Cloatius, which is the citron; all fruits resembling the peach in nothing but in the name, a clear proof that it cannot have been in their days by any means a common fruit. How few were the varieties of peach known to the ancients appears from Dioscorides who only names two, from Pliny who enu-

merates five, and Palladius four only, giving at the same time accurate information on the mode of cultivating them.

With regard to the introduction of the peach into Tuscany, it appears that several varieties were known already in the days of the Republic, but that the greater number were, as in the case of other fruits, due to the exertions of the Medici sovereigns. Matthioli, in the sixteenth century, enumerates a considerable number as then in the possession of Tuscan cultivators; Micheli, under Cosmo III., has forty-three, and in the drawings of Castello are represented about thirty. That called *Poppe di Venere* (the *Late Admirable* of our Horticultural Catalogue) is supposed to be one of the most ancient in Italy, and is mentioned by Agostino del Riccio and Micheli, under the name of *Pesche Lucchesi*.

Although all the evidence collected by Prof. Targioni tends to shew that the peach was originally brought from Persia, and he, therefore, does not consider it necessary to proceed further with the investigation, yet no traveller whom we can rely upon has ever found it growing really wild there or anywhere else. We are, therefore, left in doubt whether its native stations remain yet to be discovered, or whether its original wild type must be sought for in some species of *Amygdalus* known to be indigenous in the East. It has been more than once suggested that this original parent is no other than the common almond, a conjecture founded perhaps on the similarity in the leaves, and in the perforations of the endocarp, but rejected as absurd by those who attach even generic importance to the succulence of the indehiscent pericarp. This point cannot be decided with any degree of plausibility, until we have a better knowledge of the different forms which the fruits of wild *Amygdali* may assume under various circumstances; but we may mention, as circumstances in some degree favouring the supposition that some kind of almond is the parent of the peach, the ancient tradition referred to by Targioni (with the remark that it is contradicted by Pliny, and common sense) that the peach in Persia was poisonous, and became innocuous when transported to Egypt, and the case quoted of a supposed hybrid raised in 1831 in Sig. Giuseppe Bartolucci's garden, at Colle di Val d'Else, from a peach-stone, which produced fruits at first exactly like almonds, but which, as they ripened, assumed the appearance and succulence of peaches, whilst the kernel remained sweet and oily, like those of almonds. We might also refer to some bad varieties of peach with very little juice to their pericarps, although we do not know of any which assume the flattened form of our almond, a distinctive character which appears to us to be of considerable importance. The foliage and flowers of the two trees show little or no specific difference.

The *Jujube* (*Zizyphus vulgaris*), a common tree in the Levant, is also now found wild in various parts of South Italy and Sicily, but Italian botanists are much divided in opinion as to whether it is really indigenous, or become naturalised only after cultivation. Prof. Targioni, after Bertoloni, adopts the former opinion, and considers that the erroneous belief in its exotic origin arises from a mistaken assertion of Pliny's that jujubes did not exist in Italy prior to their importation from Syria by the Consul Sextus Papinius towards the end of the age of Augustus. Among the ancients, Hippocrates considered the fruits as medicinal; Galen depreciated them both as medicine and as food. Modern cultivation has produced a few varieties, and there is a considerable consumption of them in some parts of the south of Europe, either as an inferior raw fruit, or for the manufacture of the pectoral lozenges known as *pâte de jujube*; but they are little appreciated in modern Italy, and were still less so in earlier times.

We learn from Pliny and Galen that the *Pistachio-nut* (*Pistacia vera*) is a native of Syria, and from the former writer, that it was first introduced into Italy towards the end of the reign of Tiberius (who died A.D. 37) by Lucius Vitellius, afterwards Emperor, and that at about the same time, it was carried into Spain by Flavius Pompeius, a Roman knight, companion in arms to Vitellius. Well known to the ancients, it is supposed by some to be the *batnim* of Scripture, and generally believed to be the *Indian terebinth* indicated by Theophrastus as a native of Bactria. It is mentioned by Nieander and Dioscorides under the name of *pistacia*, *bistacia*, and *phistacia*. In Sicily it is of very ancient cultivation, and there called *jusucha* or *fasuca*. It is now

extensively planted in some parts of the Southern and Eastern Mediterranean regions, and might be so in Tuscany, where a few trees, scattered here and there, ripen their fruits well.

Notwithstanding the above-quoted indications of the eastern origin of the pistachio, it remains to be ascertained where it is truly indigenous, and what is its real wild typical form. Botanists give as its native habitat Syria, Persia, East India, Arabia, and Barbary, but in most of those countries it is certainly only known in a cultivated state. We have seen no wild specimens in our largest herbaria, and find no reliable indications of any native stations in local floras. Targioni mentions a variety *marbomensis* as having become wild in great abundance in the neighbourhood of Montpellier, but during several years herborisations in that country we never saw any species at all allied to it, except the common small-fruited *Pistacia terebinthus*. The authority of Gasparrini is also quoted for a hybrid between *P. vera* and *P. terebinthus*, which according to Sestini and Boccone, has multiplied itself in various parts of Sicily. If that be the case, it would lead to a strong presumption that notwithstanding the great difference in the size and shape of the fruit, the *P. vera* and the *P. terebinthus*, and consequently also the *P. mutica* of the Crimea and Asia Minor, are mere varieties of one botanical species common in the Mediterranean region from Spain to the Black Sea and Asia Minor.

The *Walnut* (*Juglans regia*) is a native of the mountains of Asia, from the Caucasus almost to China. It is supposed to be the *Enos* of the Bible. The Greeks had it from Asia; and Nicander, Theophrastus, and others mention it under the names of *carya*, *carya persica*, and *carya basilike* (or royal nut). Pliny informs us that it was introduced into Italy from Persia, which must have been of early date, for, although it be doubtful whether it is alluded to by Cato, it certainly is mentioned by Varro, who was born in the year 116 B.C. The Romans called it *nux persica*, *nux regia*, *nux Eubæa*, *Jovis glans*, *Djuglans*, *Juglans*, &c. They recognised several varieties, and amongst them the soft-shelled walnut still cultivated, which several commentators have confounded with the peach. In modern days the cultivation has much extended, and the number of varieties considerably increased. Jean Bauhin noticed six only. Micheli, under Cosmo III. of Medicis, describes thirty-seven, of which the original specimens are still preserved; some of those, however, are scarcely sufficiently distinct from each other.

The *Nut* (*Corylus avellana*) is said by Pliny to derive the name of *Avellana* from Abolline in Asia, supposed to be the valley of Damascus, its native country. He adds that it had been brought into Asia and Greece from the Pontus, whence it was also called *nux pontica*. Theophrastus calls these nuts by the name of *Heracleotic nuts*, a name derived from Heraclea, now Ponderachi, on the Asiatic shores of the Black Sea. Hippocrates gives them the name of *caryathusia*. Dioscorides says they were also known by the name of *leptocarya*, or small nuts. Other ancient writers confound the nut with the chesnut and the walnut. But all the above indications of importation from the East relate only to particular varieties, for the species, as is well known, is common enough in Italy as in the rest of Europe and a great part of Asia in a really wild indigenous state.

The *Chesnut* (*Castanea vesca*), celebrated amongst European trees for the enormous size it will attain, is already mentioned in the Bible. Theophrastus and Athenæus give it the name of the Eubæan nut, from the island of Eubæa now Negroponte, where it was peculiarly abundant. Pliny says that chesnuts first came from Sardi, the ancient capital of Lydia, and not far from the modern Smyrna. Galen, who was a Lydian, confirms that origin, and says that they were also called *balana leuceni*, from Leucene, situated on Mount Ida. Other writers, ancient and modern, give various Eastern countries as the native stations of the chesnut, and even Giovanni Targioni-Tozzetti, our author's grandfather, believed them to be introduced only into Italy; but not only have the extensive chesnut woods in the Apuan Alps and other parts of the Apennines, mentioned by Bertoloni, every appearance of being really indigenous, but further evidence that woods of this tree existed in Tuscany from very remote times, may be found in the number of places which have derived their names from them, such as Castagna, Castagnaia,

Castagneta, &c. We may, indeed, safely give as the native country of the wild chesnut, the south of Europe from Spain to the Caucasus. It does not extend to East India.

The larger fruited varieties which we import for eating, and which are generally distinguished in France and Italy under the name of *marrons* or *marrone*, were probably those which were first introduced from the East by the Romans. Pliny enumerates eight different varieties. Micheli has forty-nine, most of which, however, from his own specimens are, as in the case of the other fruits mentioned in his manuscript, founded upon distinctions too slight to be really available for their separation.

The *Fig* (*Ficus carica*) is a native of the south of Europe, including Greece and Italy, of Northern Africa and of Western Asia. The wild type known in Italy by the name of *Caprifico*, has indeed been distinguished by Gasparrini not only as a species but as a separate genus, but we cannot but concur with Prof. Targioni in the opinion, confirmed by positive assertion on the part of practical pomologists, both ancient and modern, that our garden figs are of the same species and have repeatedly been raised from seeds of the wild caprifico.

We find mention of the cultivation of figs, and of the high estimation in which these fruits were held, in the very earliest writings, in the Holy Scriptures, as in Homer's *Iliad*. Those of Athens were celebrated for their excellent flavour. Xerxes was tempted by them to undertake the conquest of Attica, in the same way that Cato urged the Romans to that of Carthage, a fig in his hand. The number of varieties, however, produced in ancient Italy were not numerous. Six only were known in the time of Cato. Others were afterwards introduced from Negropont and Scio, according to Pliny, who gives a catalogue of thirty sorts. Their names are mostly taken from the countries whence they had been brought, such as the African, the Rhodiote, the Alexandrine, the Saguntine, &c., or from some great personage who had introduced or patronised them, such as the Pompeian from the great Pompey, the Livian from Livia the wife of Augustus, &c. Macrobius, two centuries after Pliny, enumerates twenty five, but generally under different names from those of Pliny. Galesio, in his *Pomona Italiana*, has referred a few of those ancient names to modern Italian varieties, as for instance:—

The *Albicerata* to the white fig of the Italians.

The *Tiburtina* to the gentile.

The *Africana* to the brogiotto nero, which some believe to be also the *Emonio* of Athenæus.

The *Liviana* to the pissalutto.

The *Lydia* to the *fico trojano*, very abundant at Naples.

The *Carica* to the *dottato*, common in the Levant, and originally from Cauni in Caria, from whence so many were sent to Greece, and called on that account *cauni figs* and *Carica*.

(To be continued.)

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- 4.—Nuttallia cerasiformis. A beautiful hardy border plant, with bay-like leaves, and small stone fruit like a cherry 1 6
- 5.—A beautiful climbing Cucurbitaceous plant, allied to *Sicyos*, with large seeds, contained in a spiny capsule 1 6

A very small quantity of the above Seeds has been received from the Collector. All are perfectly fresh, and of this season's growth. Early orders are necessary, and will be sent free to any address.

1st January, 1855.

PETER LAWSON and SON, Edinburgh and London. London Branch:—27, Great George Street, Westminster.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of heat and cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of two yards wide, at 1s 6d per yard run, of

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BIRD NETS, BAT-FOLDING NETS, for Bird

Catching, 5s each; with Bamboo Poles complete, 10s.; Extra Large 15s. complete. Clap Nets for Bird Catching, twelve yards long, five feet deep, 15s.; with Staffs, Pull Line, and Stop Cord, £1. Lark Nets, made square mesh, any size required, 3d per square yard.

A Partridge Trammel, thirty yards long, five yards wide, made square mesh, £1 11s, or any less size, 2d per square yard.

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OATS should be BRUISED, but not PULVERISED.

WM. DRAY and CO.'s ROLLER MILLS effect a Saving of One-third in the Keep of a Horse. A Priced List will be forwarded on application to WM. DRAY & CO., Swan Lane, Upper Thames Street, City.

GLASS for CONSERVATORIES.—Thos. Millington

requests attention to the present PRICES of SHEET GLASS, packed in 100 feet Boxes, Good Quality, about 15 oz. to the foot, Boxes 1s extra, but allowed for when returned.

Inches.	100 feet.	Inches.	100 feet.	Inches.	100 feet.
6 by 4	10 1/2 by 8 1/2	15 by 10			
6 1/2 by 4 1/2	11 by 9	15 1/2 by 10 1/2			
6 1/2 by 4 1/2	11 1/2 by 9 1/2	16 by 10			
6 1/2 by 5 1/2	12 by 9	16 1/2 by 10 1/2			
7 by 5	12 1/2 by 9 1/2	17 by 10			
7 1/2 by 5 1/2	12 1/2 by 10	17 1/2 by 10 1/2			
8 by 6	12 1/2 by 10 1/2	18 by 11			
8 1/2 by 6 1/2	13 by 10	18 1/2 by 11 1/2			
9 by 7	13 1/2 by 10 1/2				
9 1/2 by 7 1/2	14 by 10				
10 by 8	14 1/2 by 10 1/2				

Large Sheets for cutting up in Cases, at 2 1/2d and 3d per foot.

T. M. has supplied large quantities to Mr. Rivers for Orchard Houses, &c.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars with and without covers.

Plate, Sheet, Crown, and Ornamental Window Glass; Crystal Glass Shades for Ornaments.

87, BISHOPSGATE STREET WITHOUT, LONDON.

(Same side as Eastern Counties' Railway.)

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and CO. have the pleasure

to hand their present prices of Glass for Cash:—

SHEET SQUARES.	CROWN SQUARES.
In Boxes of 100 feet.	In Boxes of 100 feet.
Under 6 by 4 ..	£0 12s 6d ..
6 by 4, and 6 1/2 by 4 1/2 ..	0 13 0 ..
7 by 5, — 7 1/2 by 5 1/2 ..	0 15 0 ..
8 by 6, — 8 1/2 by 6 1/2 ..	14 0 ..
9 by 7, — 10 by 8, 12 by 9, } 12 by 10, 14 by 10 }	1 0 0 ..

Larger Sizes, not exceeding 40 inches long, 16 oz. from 3d to 3 1/2d per square foot, according to size.

21 oz. .. 4 1/2d to 5d ..
26 oz. .. 6d to 7 1/2d ..

SIXTEEN-OUNCE SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand,

at 20s per 100 feet.

Double-crown Glass of various dimensions in 100 feet boxes.

HARTLEY'S PATENT ROUGH PLATE GLASS,

Packed in boxes of 50 feet each.

6 by 4 and 6 1/2 by 4 1/2 ..	10s 6d per box.
7 by 5 .. 7 1/2 by 5 1/2 ..	12 0 ..
8 by 6 .. 8 1/2 by 6 1/2 ..	13 6 ..
9 by 7 .. 9 1/2 by 7 1/2 & 10 by 8 ..	15 0 ..

For larger sizes a full List of Prices will be sent on application.

Glass Tiles, 1 of an inch thick, packed in cases, containing 50, at £1 17s 6d per case. Packages 2s each extra, but allowed for when returned.

Glass Milk Pans, 21s per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

HORTICULTURAL GLASS WAREHOUSE,

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SIR JAMES MURRAY'S FLUID MAGNESIA.—

Prepared under the immediate care of the Inventor, and established for upwards of thirty years by the Profession, for removing BILE, ACIDITIES, and INDIGESTION, restoring APPETITE, preserving a moderate state of the bowels, and dissolving uric acid in GRAVEL and GOUT; also as an easy remedy for SEA SICKNESS, and for the febrile affection incident to childhood it is invaluable. On the value of Magnesia as a remedial agent it is unnecessary to enlarge; but the Fluid Preparation of Sir James Murray is now the most valued by the profession, as it entirely avoids the possibility of those dangerous concretions usually resulting from the use of the article in powder.

Sold by the sole consignee, Mr. WILLIAM BAILEY, of Wolverhampton; and by all wholesale and retail Druggists and Medicine Agents throughout the British Empire, in bottles, 1s, 2s 6d, 3s 6d, 5s 6d, 11s, and 21s, each. *** The Acidulated Syrup in Bottles, 2s. each.

N.B.—Be sure to ask for "Sir James Murray's Preparation," and to see that his name is stamped on each label, in green ink, as follows:—"James Murray, Physician to the Lord Lieutenant."

CHAFF-CUTTING MACHINES.—A List of Prices,

with full description, will be forwarded on application to WM. DRAY and CO., Implement Manufacturers, Swan Lane, Upper Thames Street, London.

WEEKLY CALENDAR.

D M	D W	JANUARY 9—15, 1855.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
9	Tu	<i>Sphodrus planus</i> .	29.119—29.096	40—37	E.	06	6 a 8	8 a 4	10 43	21	7 18	9
10	W	<i>Dyschirius gibbus</i> .	29.606—29.435	38—34	N.	02	6	10	11 55	22	7 43	10
11	Th	<i>Dromius quadrimaculatus</i> .	29.896—29.833	38—31	N.	—	5	11	morn.	23	8 7	11
12	F	<i>Dromius rufescens</i> .	29.833—29.659	40—29	S.E.	02	4	13	1 9	24	8 30	12
13	S	<i>Dromius linearis</i> .	29.656—29.596	42—28	S.	08	4	14	2 28	25	8 53	13
14	SUN	2 SUNDAY AFTER EPIPHANY.	29.873—29.707	45—26	S.W.	10	3	16	3 52	26	9 16	14
15	M	<i>Dromius punctomaculatus</i> .	29.715—29.624	40—32	S.W.	—	2	17	5 18	27	9 37	15

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 41.4°, and 31.2°, respectively. The greatest heat, 56°, occurred on the 14th, in 1849; and the lowest cold, 4°, on 14th, in 1838. During the period 104 days were fine, and on 92 rain fell.

THE ordinary monthly Meeting of the BRITISH POMOLOGICAL SOCIETY was held at the Rooms, 20, Bedford-street, Covent Garden, on Monday the 1st inst., John Lee, Esq., in the chair.

Specimens of a seedling Apple, from William Marshall, Esq., Ely, were presented. The variety was found to be of good size and colour, tender flesh, considerably juicy, and crisp, with the aroma which is peculiar to the Oslin, but not nearly so powerful. The Meeting was of opinion, that although a good variety, it would not be desirable to increase the number already in cultivation by adding it to the list, as it possessed no superior merits. A collection of Apples and Pears from Mr. Cranston, of Hereford, illustrative of the varieties of fruits cultivated in the neighbourhood of that city, was of considerable interest. S. Geo. Wintle, Esq., of Gloucester, also sent a collection of Apples from the orchards in the neighbourhood, which contained some excellent specimens of the Ashmead's Kernel, and Golden Harvey, and also of several other varieties peculiar to that district. The characters and merits of each variety both in this and Mr. Cranston's collection were noted by the Secretary, with the object of embodying them in the Transactions of the Society.

The Meeting then proceeded to the appointment of Members of the Local Committees, when the following gentlemen were elected for Ireland:—N. Niven, Esq., Drumeondra, near Dublin; W. Bewley, Esq., Black Rock, near Dublin; J. Abel, Esq., Limerick.

The following gentlemen were elected ordinary Members:—George Gibson Richardson, Esq., Reigate; Samuel George Wintle, Esq., Gloucester; Rev. R. H. Graves, D.D., Brigown Glebe, Mitchelstown, Ireland; Mr. Henry Lane, Jun., Berkhamstead.

THE history of Botany furnishes us with several instances of enterprising men, who devoted a large measure of their means, or personal enterprise, to the enrichment of the botanical collections of this country with the vegetable products of foreign regions. To such men the present generation is greatly indebted; and thus it is that the names of the Tradescants, Peter Collinson, Dr. Anderson, John Fraser, James Lee, and the Loddiges, are so familiar to the minds and the memories of all true lovers of botanical science. For nearly half-a-century, however, that spirit of private enterprise has, except in a few instances, given way to

the united efforts of corporate bodies and government officials; and it was not till the bold and energetic course which has been pursued by a provincial nursery man of England was adopted, that a new era in botanical discovery was begun, which has placed the name of "VEITCH, OF EXETER," among the worthies of science in these our own times.

The father of MR. JAMES VEITCH was a native of Jedburgh, in Scotland, and towards the close of the last century he came to England, where he acted, for many years, as land steward, on the property of Sir Thomas Acland, at Killerton, near Exeter. Some years afterwards, he established a nursery at Killerton, and there the subject of our present notice was born, on the 25th of January, 1792.

The success which attended the formation of the Killerton Nursery was so great, that, in course of time, Mr. James Veitch found the distance of eight miles from Exeter disadvantageous to the interests of the establishment, as it prevented him from competing with those nurseries which were nearer the city; and accordingly, in 1832, he purchased that large extent of ground formerly called Mount Radford, but now converted into what is better known by the name of the "Exeter Nursery," an establishment which, by the industry and energy of Mr. Veitch and his son, has attained such a position as to be justly regarded as the finest of the kind ever known in England.

In the year 1837 there were, in the Killerton nursery, two young men named William and Thomas Lobb, who were gardeners, and who were remaining there with a view to improvement in their profession. In this same year, Mr. William Lobb was sent by Messrs. Veitch as gardener to Stephen Davey, Esq., of Redruth, in Cornwall, and after remaining there for three years, he was appointed by Mr. Veitch to proceed to the Brazils as a botanical collector; and he accordingly left England in 1840. The singular success which rewarded his researches, is, perhaps, unparalleled in the history of botanical discovery; the labours of David Douglas not even forming an exception. In the first parcel sent home were those two justly popular plants, *Dipladenia splendens*, and *Hindsia violacea*; and from these, down to the later arrivals, including the wonderful *Wellingtonia gigantea*, what a mass of interest and beauty has been added to the gardens of Great Britain!

About three years after Mr. William Lobb left, his brother, Thomas Lobb, who was then in the Exeter



*German Consul
Inspector*

nursery, was sent by Mr. Veitch to Java, and the success which attended his efforts were not short of that of his brother. In the first parcel he sent home was that magnificent Orchid *Phalanopsis grandiflora*, not before known in England, *Vanda suavis*, and numerous others.

To enumerate all the plants that these gentlemen have discovered, or which Mr. Veitch has been the means of introducing, would occupy more space than we can afford to devote; but we shall furnish a list of some of the most remarkable of these introductions, showing to what an extent the country is now indebted

to the enterprise of Mr. Veitch. It may be worth recording, that all these new introductions, whether in the shape of seeds, or living plants, are on their arrival taken under Mr. Veitch's personal care. He sows all seeds with his own hands, watches and tends to them; and it is not until they are beyond all danger that they are committed to the management of others.

In April, 1853, the old establishment of Messrs. Knight and Perry, of the King's Road, Chelsea, being about to be relinquished, was offered to Messrs. Veitch and Son, of Exeter, who shortly afterwards became its possessors; and now, in this extensive

establishment, may be seen one of the most extensive and valuable stocks of exotic plants which is to be met with in any private establishment in this country. The following is a list of a few of the most remarkable plants introduced to this country by Messrs. James Veitch and Son:—

<i>Abutilon vitifolium.</i>	<i>Laurus aromatica.</i>
<i>Aërides Lobbii.</i>	<i>Lilium giganteum.</i>
<i>Æschynanthus Lobbiana.</i>	<i>Limatodes rosea.</i>
" <i>pulcher.</i>	<i>Lomaria Magellanica.</i>
<i>Anæctochilus Lobbii.</i>	<i>Lomatia ferruginea.</i>
<i>Begonia coccinea.</i>	<i>Magnolia fragrantissima.</i>
" <i>coarctata.</i>	<i>Mahonia Leschenaulti.</i>
" <i>estuans.</i>	<i>Manettia coccinea.</i>
<i>Berberis Darwinii.</i>	<i>Medinilla magnifica.</i>
<i>Bulbophyllum Lobbii.</i>	" <i>speciosa.</i>
<i>Calanthe vestita.</i>	<i>Mitraria coccinea.</i>
" <i>curculigoides.</i>	<i>Nepenthes albo marginata.</i>
<i>Cantua dependens.</i>	" <i>lævis.</i>
<i>Ceratostemma longiflora.</i>	" <i>lanata.</i>
<i>Collisia heterophylla.</i>	" <i>Phyllamphora.</i>
<i>Cryptomeria Lobbii.</i>	" <i>sanguinea.</i>
<i>Cypripedium barbatum su-</i>	<i>Pernettya mucronata spe-</i>
<i>perbum.</i>	<i>ciosa.</i>
<i>Cypripedium caudatum.</i>	<i>Phalænopsis grandiflora.</i>
<i>Desfontanesia spinosa.</i>	" <i>Lobbii.</i>
<i>Dendrobium albo sangui-</i>	" <i>rosea.</i>
<i>neum.</i>	<i>Philesia buxifolia.</i>
<i>Dendrobium chrysotoxum.</i>	<i>Picea bracteata.</i>
" <i>Farmerii.</i>	<i>Pleuroma elegans.</i>
" <i>Kuhlii.</i>	<i>Pleione humilis.</i>
" <i>tortile.</i>	" <i>Laginaria.</i>
" <i>transparens.</i>	" <i>maculata.</i>
" <i>Veitchianum.</i>	<i>Podocarpus nubigena.</i>
<i>Deutzia gracilis.</i>	<i>Quercus agrifolia.</i>
<i>Dracæna indivisa.</i>	<i>Rhododendron californi-</i>
<i>Echites atropurpurea.</i>	<i>cum.</i>
" <i>splendens.</i>	<i>Rhododendron Javanicum.</i>
<i>Eseallonia macrantha.</i>	" <i>jasminiiflorum.</i>
" <i>organensis.</i>	<i>Rubus japonicus.</i>
<i>Eschscholtzia tenuifolia.</i>	" <i>leucodermus.</i>
<i>Eugenia Ugni.</i>	<i>Saxe-Gothea conspicua.</i>
<i>Fitz-Roya Patigonica.</i>	<i>Saccolobium Blumei major.</i>
<i>Fuchsia macrantha.</i>	" <i>curvifolium.</i>
" <i>serratifolia.</i>	" <i>miniaturum.</i>
" <i>spectabilis.</i>	<i>Sobralia dichotoma.</i>
<i>Hexacentris lutea.</i>	<i>Sonerila margaritacea.</i>
" <i>mysorensis.</i>	<i>Tropæolum Smithianum.</i>
<i>Hindsia longiflora.</i>	" <i>Lobbii.</i>
" <i>violacea.</i>	" <i>speciosum.</i>
<i>Hoya bella.</i>	" <i>azureum.</i>
" <i>campanulata.</i>	<i>Torreya myristica.</i>
" <i>fraterna.</i>	<i>Thuja gigantea.</i>
<i>Ixora Javaniana.</i>	<i>Telepogon obovatum.</i>
" <i>Lobbii.</i>	<i>Viola lutea.</i>
" <i>salicifolia.</i>	<i>Vanda cœrulea.</i>
<i>Impatiens Jerdoniæ.</i>	" <i>tricolor.</i>
<i>Lardizabala triternata.</i>	" <i>suavis.</i>
<i>Leptosiphon aureum.</i>	<i>Veronica salicifolia.</i>
" <i>luteum.</i>	<i>Wellingtonia gigantea.</i>
<i>Lapageria rosea.</i>	<i>Whitlavia speciosa.</i>

THE HOLLY.

Of all the evergreens we possess, not one can excel this for either utility or decoration; indeed, can any one evergreen equal it? Whether we take it as assisting in the embellishment of our garden scenery, as shelter for cattle in hedges, as a tree for the grove, as occasionally furnishing shelter for game, or as a park tree, it has scarcely a compeer. Let any one examine shrubberies, or belts, in various parts of the kingdom, and he will

find that, whatever the mixture of kinds might have been originally, the bill-hook and saw, before many years pass away, remove, through decay or unsightliness, numbers of things which at first planting, and for a few years afterwards, appeared to set the Hollies at nought; but the Holly, where it thrives, by degrees assumes a kind of supremacy, not in mere height or bulk, certainly, but in a permanency of character, and dignity of appearance, which scarcely admits of competition.

How seldom do we find thriving Hollies a prey to the bill-hook, the saw, or the woodman's axe! Its importance in what may be termed winter scenery will be denied by no one; and, although many of our conifers, in which we are now so extremely rich, excel it in towering dignity, and attract more, through peculiarity of form; yet, who is he that will assign our Holly a secondary degree of importance?

As to its Christmas associations, let bygone centuries speak. It is said by some, that our native Holly, or, as botanists term it, *Ilex aquifolium*, derives its name from a corruption of the word *holy*. Its fame, indeed, is at least European. In Scotland, we are told that the Holly hedges at Tynningham, which were planted about 1712, are a score feet in height, and a dozen feet in width. Our readers will be at once aware, that a tree so universally spread in many climes, in most soils, possesses amazing adaptabilities.

With regard to soils, I have had a good deal to do with the Holly in my day, and have witnessed, on countless occasions, its respective degrees of luxuriance on what I call, in a practical sense, our three principal soils:—peats, or moor soils; adhesive loams; and loose, or sandy soils; and I really know not to which it is most partial. One thing I may relate as to my own experience: I never knew the Holly to thrive in a soil that was stagnant below through excess of moisture. It is a tree that will not only bear, but enjoy, any amount of rain, providing there is a free escape for the excess of water; and even in certain ungenial subsoils, to which Hollies have a great aversion when charged with moisture, I have known them to enter freely when in a mellow and somewhat dry condition.

When, in my younger days, I practised in the neighbourhood of the great Metropolis, I had a fancy that there was nothing like what cockney gardeners termed loam, which then signified only one thing—an adhesive loam, yet one that was easily worked when not too wet: it might be Wimbledon loam—it might be Norwood. But subsequent practice has shown me, that it is not by any means in this case a mere matter of texture. In the district from whence I write we have all sorts of soils; and, as to my cottage, why, if I travel two hundred yards to the east, I shall speedily be ankle-deep in clay; if I move one hundred to the south, I shall be slipping about in light sandy loam; but, by retracing my steps, and moving a score paces from the back-door of my cottage, I am speedily in a black peaty morass. I may say, to the east lay many square miles of heavy clay soil; to the south, as many of a free, sandy loam; and to the north, or north-west, Delamere forest, covered for miles with Heather, Scotch Firs, and Larch. Now, on all these soils the Holly thrives: tolerably well on the clay, better still in the moor soil, and best of all in the free sandy loam.

To show that the Holly does not, of necessity, require even a moist soil, I may observe, that in this very neighbourhood, which, on the forest side, contains scores of enclosures of reclaimed moor-soil, Hollies may be found, in every "hedge cop," in the most healthy state imaginable—many of them quite the pride of the locality. As our readers in general may not know what a Cheshire "hedge-cop" means, I may tell them, that most of the enclosures of strips, or corners, of moorland-

soil hereabouts, have a "cop," or raised bank, around them, on which the Thorn hedge is planted. These "cops" are about two feet above the ground-level, and, as may be readily imagined, are seldom very moist: the moor, or heath-soil, of which they are mainly composed, being of an exceedingly loose character, and possessing little of the principle of cohesion. In former days, considerable quantities of sheep, of what are called the "Forest breed," were sustained on these unreclaimed moors; and, doubtless, the first act of those who enclosed under such circumstances, would be to raise this embankment,—termed "cop,"—as a help to the quickset-hedge, which, on such lean soil, had to go through a severe probation before it could become established.

If one thing more than another can be inferred from these circumstances it is this,—that the Holly will succeed in almost any soil that is tolerably friable, of a reasonable depth, and, above all, over a dry subsoil.

To the landscape, or ornamental gardener, this useful, rich, and noble evergreen is of the very highest importance. To pass from the common Holly in its green state, what an almost endless variety has proceeded from it, or claims affinity! To say little of the striped kinds, comprising not only a great variety in regard of tint, or colouring, from the palest silver up to the warmest gold, or assuming even a crimson or purple hue,—what various forms does the foliage assume, and how varied the general expression of the whole tree! And as to foliage in this family,—we have waved leaves, leathery leaves, saw leaves, ciliated, or hairy leaves, narrow leaves, broad leaves, margined leaves, spineless leaves, the hedgehog leaved, the yellow berried, and I know not how many others; these, however, concern the planter most.

But not in leaves alone need we seek for distinctness; habit of growth is, of course, a great consideration, as to ornamental gardening at least. And here we may find the spiry, the compact, the branchy, the squat, and, indeed, many other forms or habits, even under ordinary conditions; but, treated specially; you may have as many forms as you please. All gardeners know full well its singular pliability, whether under the operations of the knife or the shears. If I were a gentleman about establishing new gardens, in which shrubberies, shrub-masses, screens, &c., were concerned, I should press hard on my planter to introduce nearly twenty per cent of Hollies, feeling assured, that in the subsequent operations of thinning, removal, &c., my son, if not my grandson, would justify me for so strong a feeling.

I wonder much that our farmers do not make a more free use of the Holly; to be sure, it will not bear cutting down, as a hedge, like the White Thorn, and, where the course of tillage is of such a character as to require the periodical cutting-down of weak Thorn hedges, why the Holly can form no part of such a system, if system it must be called. Such, however, is the exception as to the country at large; and I may here advert to the character and value the Holly assumes in my own locality as a shelter for cattle, whether systematic or accidental. Everybody connected with matters requiring shelter, whether in the garden or the field, knows full well the value of an evergreen over a deciduous hedge, through the autumn, winter, and early spring. Of course, what will shelter a horse or cow will shelter a Cauliflower; and we all know, that a dead fence, such as a wall or close paling, through its entire impenetrability, creates an eddy, or current, which is robbed of half its violence by a stout hedge, or even by a huge Holly-bush at intervals. We have numerous fields, within a few miles of us, in which a thick Holly-bush or two occurs at intervals; and it is amusing, as well as confirmatory of the utility of the Holly as shelter, to see the cattle in

wintry weather creeping to their sides in severe winds; and the cattle are pretty good judges as to the best kind of shelter.

But to return to the garden. What I would direct the attention of proprietors to, is the importance of securing a considerable quantity of Hollies in their shrubberies and plantations; if they have not formed a good proportion to other trees at first, to lose no time in introducing more. Where Hollies are required to be introduced to old shrubberies, in order to redeem the omissions of the original planter, some management is requisite. It generally becomes necessary to use the mattock, saw, and bill-hook previously; for, although Hollies will do with as intense a shade as most of our hardy trees, yet a little freedom is requisite to start them. Moreover, there is the rivalry of the roots of contiguous trees or shrubs, which may not be borne beyond a certain degree. Above all, the soil should be well broken up where they are introduced; it is of no use making little round holes and "sticking in" a plant here and there. People may as well plant them in a wash-hand basin. Everybody knows that old shrubberies, full of the roots of trees and shrubs, and consolidated through time, acquire a consistency and texture much adverse to the free rooting of young shrubs; which, indeed, cannot be expected to compete with old trees and shrubs without a special provision.

R. ERRINGTON.

PLANTING AND STAKING TREES.

FROM the end of last July to the third day of the new year, the present date of writing this, the weather has been more favourable for the operations of the gardener and planter than the same period has been for the last two-and-thirty years, when I first entered the garden; and yet the buds are not so forward for the next season as I have often seen them at the beginning of January. But that backwardness is all the better for us. Every tree, and bush, and plant has ripened thoroughly this last autumn, if that was at all natural to it in our climate. Every tree and bush that was transplanted last October, and many which were not moved till late in November, had made young feeding roots before the end of the old year; and if the staking of such trees was strong enough to stand against the high wind which ushered in the new year, and broke down many trees round London, the hopes of the planter may be as surely fixed as his newly-planted trees.

I never knew, till this autumn, that sack-ties (rope yarn) is the best "textile" for fastening and tying newly-planted trees with, as they have tied the Araucarias at the Crystal Palace with metallic wires. I was told of this by an old woodman, who was afterwards a sailor, and is now a Nimrod in one of the best families in the neighbourhood. He is the first coachman I ever knew to be a good planter, and to like "a good pull," when he is not wanted to "pull up." All the stakes in the world, if they were fastened by civil or military engineers, are not half so good for keeping up newly-planted trees against all weathers, as small "guy" ropes, three to each tree, and fastened to other trees, if they are near, or to stakes fastened very firmly into the earth, as far from the stem of the tree as the ropes are tied up from the ground. The difficulty hitherto experienced by gardeners in the use of rope was, that they could not be made sufficiently tight to hold the tree quite steady, as they would "give and take," or expand and contract, according as they were dry or wet; this first led to the use of the metallic ropes for the same purpose, and for a few ornamental trees about the more dressed parts of the ground these are still to be preferred; but when you come to "plant out" a whole side, or front, or back view, with large trees, to hide those dreadfully ugly

chimnies, or staring cottages, the trees must be fastened somehow, to keep them from blowing about, and sack-ties are far better, and nearly as cheap—in some places much cheaper—than long forked stakes, provided these forked stakes are put up as they should be, which is, however, not always done.

The right way to fasten a prop, or this kind of stake, is to have the forked end just under a bough, or branch, and three of them are necessary for a heavy-topped, or large tree; to have the forks wadded round and round with haybands, before fixing them, or to place the hay-band first twisted round that part of the tree where the props meet; but the first is the best practice. The other end of the prop, which goes into the ground, ought to be blunt, and to be as firmly fixed as a gate-post. Instead of this, we often see a handful of loose hay, or straw, or moss placed in the fork of the prop, which is then pushed up against the tree, and a slit made in the ground with a spade, to receive the bottom end, which then gets a few stamps with the foot, and all is finished; or, perhaps, for greater security (?) a cord is now run round the ends of the three props where they meet up to the tree. Now, if there never was a puff of wind stronger than one's breath this kind of staking would do very well; but the tree would do just as well without it. The fork with the mouthful of hay begins to wriggle about with the first strong wind, it soon gets loose enough to let the tree shake about, and after that it does as much harm as it was intended to obviate, by chaffing the bark, and by allowing the roots to be doubled up at every move of the tree. The doubling of the roots is by far the most serious objection to careless staking; but as it is not seen, few people think there is any harm that way, if the tree keeps upon its legs. However, when this great evil is once perceived and understood, the planter will appreciate the value of a perfect tie. That he may be able to see his danger, let us put a case,—an every-day instance; a fine, tall evergreen, which was cut round the roots last year is to be removed, or is up ready for planting; you see those white fibry roots set round the ball as thick as they can come forth, and from the careful lifting none of them are broken; they all stand out from the ball, some two, four, or six inches long, and some twice that length; but all of them are as soft and tender to the touch as the new roots of a cut-down Geranium; the tree is planted with water, that is, to get the little distances between the numerous roots filled with soil, or the sandiest part of it, water from the spout of a pot is poured on as the roots are being covered with earth, and the water carries off the sediment, as we may say, into every open space all round the ball, and among the roots; every one of the soft white roots, or fibry old ones, lie at full length in a muddy trench when the tree is finished; as the water escapes, the soft earth about the root gets firmer and firmer every day, till, at last, it is as solid as a tub of Dutch butter, and as soft to the touch, and nearly as greasy, if the soil is good loam,—no condition could be more favourable for the young roots to extend in; but, now, mark the consequences of bad staking. The first time the wind bends the head of this tree to one side, the ball moves a little to one side also, and draws the tender roots after it; but when the tree is righted again, the roots on one side are doubled up, for they cannot be pushed into their former position like the top of the tree; the next change of wind rolls the tree to the other side, the roots on the other side follow, but cannot go back as they were, and thus, bad staking is doing the mischief out of sight, and no one heeds it, till the dry winds of March reveals the truth, and the fault is ascribed to other causes than the true one,—the crippled condition of the roots which was so promising at the time of planting.

The old way of shaking a tree to this and to that side,

or up and down, when the earth was being thrown in after the roots, told just in the same way; all the small fibres must have been doubled over and over again, in the act of filling the earth in between them; when this was discovered at last, the value of having the roots in their right position was seen, and filling in the soil by means of the water-pots, and no shaking of the plant, were adopted, as the best means of securing the desired end; yet the very same practice of displacing, and of doubling them up into bundles, has been carried down to this very day, by all who neglected to have their trees properly secured after planting them; I say to the present day, because I am not aware that the evil of bad staking has ever been pointed out in its effect on the young roots; but the thing is as clear as if it were visible on the surface of the ground, instead of being out of sight below the surface. Indeed, we often wonder such and such trees could die, seeing all the pains which had been taken to secure good roots to them, and by the best planters; but there was a hitch in the manner of staking them; they rolled from side to side, some time or another, before the roots and earth were firm enough to hold against the strain, and they died and died by inches; no one knowing for why; but the why is plain enough now, and the smallest Gooseberry-bush we plant is as liable to it as the largest tree; and so with all plants; hence the necessity of the greatest care in fixing them, so that the roots are not displaced from the training they received at the first time of planting; and hence, too, the reason why I would do away with stakes altogether for the finer specimens, and use sack-tie ropes instead, on the recommendation of the coachman, sailor, and woodman, all in one tie.

The trees for which this tie was recommended were various Hollies—green and variegated—Yews, Cypress, Arborvitæ, Box, and others, from ten to fifteen and twenty feet high, full-headed, and planted without much shelter round them. They were transplanted last autumn, fixed by sack-ties, and now they have made some healthy progress in new roots; and if they die, it will not be from bad fixing, for they can hardly move an inch at the top. They are mulched, too; and I would venture my head on it, that none of our readers could guess at the first hit with what they have been mulched. There is nothing more sure than facts; and one fact is worth three proposals. If I had proposed to mulch trees, in general, with the same kind of mulching material, I should not, probably, obtain a hearing; but the thing is done, and two birds have been killed by one stone in the doing of it; therefore, to save fifty per cent in hard times is worth more than a passing notice,—it is worth remembering for future use; but I must tell it in my own way.

The large clump of evergreens was planted at the extreme corner of a lawn, looking from the drawing-room. The lawn itself is as soft as velvet; the gardener who kept it so for more than twenty years, is, and has always been, as fond of mossy lawn as your humble servant, and he says, his father was even more partial to moss than either of us. One wise gardener, therefore, lived in the last generation, at any rate, and his mantle has fallen to his successor; but, like me, he is now getting old, and is not so fit as he was to keep the moss and the grass in that balance which gives the velvety touch to the lawn; in truth, the moss has been gaining ahead for the last few years, till, at last, when you walked across it, the yield under the foot was like the yielding of dry sand along the beach, and you slipped so much backwards at every step,—yet it was very soft and agreeable should you not be in a hurry; but the grass was getting more feeble, year after year, and more liable to burn in summer, when the moss was resting, till at last, or the last week before last Christmas, it was resolved on, that a sweeping change

should be made right along, and crossways. It was a hard pull, certainly, but it answered as perfectly as anything I ever saw done; no carpet is more firm to tread on now, nor more comfortable. A new mowing machine was set to work where you could hardly see any grass to get hold of; but it did get hold of a good heavy bite of moss and grass together, and the machine bit so close that a child could not now pick a handful of moss till his fingers were tired. The grass is on the move already, looking quite green, while the remains of the moss is all brown. The lawn will be as soft with moss as is pleasant for several years to come, or till we get such another mild winter as will allow of the machine in the dead of the winter,—just the right time to cut a heavy crop of moss to any advantage. But I forget how many grass-barrows of the soft mixture of grass and moss went to make the new plantation of evergreens. I also forget all that Mr. Wright said about his father and the moss, except, "If he had seen that, he would think it as strange as the railroads." Perhaps he would; and if he had seen trees planted without a good shaking, and fixed with cords, perhaps he would consider it equally strange,—who knows but he would?

SOWING *DIELYTRA* *SPECTABILIS*.

I received, last autumn, two packets of seeds of this favourite plant from two correspondents; the one I sowed at the time, and kept the other till about the middle of February, as I expected all along that that being the natural time for the old roots to sprout, might be the right time for the germination of the seeds. I know several instances among bulbs, whose seeds will not vegetate at any other time than that when the bulbs begin to grow; but that the seeds should not possibly miss the proper attention, should they lie dormant all the winter, I put them in the centre of a pot of *Geranium* seedlings, which were only round the sides. On the 12th of December, I saw two seed-leaves rising; they looked like the first leaves of a Carrot, and three weeks after that the true leaf appeared, and I do not think there will be any difficulty in rearing the young thing. To make more sure of my pets, I placed a bell-glass over the centre of the pot, and that may have caused this seed to sprout prematurely. In future, the safest plan will be to keep the seeds till about the end of February, and then sow them, and they will vegetate soon after that. D. BEATON.

CLERODENDRONS.

SOME inquiries having been made by amateurs, I give a comprehensive answer in this place, as the culture of the plants has not recently been referred to.

1. "What is the proper treatment for *Clerodendrons*? When should they be re-potted? How should the new one, called *Bungei*, be managed?" The time of re-potting will greatly depend upon whether you mean to give them a general plant-stove treatment; or, merely as much heat in the spring as you would give an early Cockscorn or Balsam that you intended to decorate the greenhouse in summer. The time of re-potting will, therefore, be greatly influenced by the conveniences you possess for giving a nice, sweet, moist heat, of from 60° to 70°. Commencing from the present time, we would, as a general rule, continue the winter treatment until towards the beginning of March. Supposing that the wood was pretty well ripened in the autumn, by exposure to the sun after the flowers were fading or gone,—for much of the size and beauty of the flowers in the following summer depends upon the ripening of the wood and buds during the previous autumn,—the winter treatment will consist in keeping the plants in a temperature ranging from 43° to 50°, with a rise from

sunshine, and giving no more water than will just prevent the stems from shrivelling.

Now, supposing that the plants have been kept in this dormant state during the winter, and you wish to start them into growth some time in March, or earlier,—the great desideratum for their high culture is a position where you can give them a bottom-heat—if from fermenting matter all the better—of from 70° to 80°, and a top-heat from 55° to 65°. Mind, I do not advise bringing a plant from 45°, and giving it this rise of temperature at once. All changes should be gradual; *bursts*, and *gallops*, and *hark-a-ways*, are not the things for gardening. The plants should not be plunged at first, and more air should be given at the commencement, so that the highest rate of temperature should be reached, by a gradual process, in the course of eight or ten days.

The great points of the increased temperature and a sweet bottom-heat being secured, the whole tribe has so much patience and quiet resignation amid all the injuries and loppings to which they may be exposed, that they generally thrive so well as to show no resentment, though some of the recognised rules of vegetable culture may, in their case, have been transgressed and broken. I have taken such plants from their winter quarters, beneath a stage, or any out-of-the-way place, have pruned the shoots down to within a bud or two of their base, have then shaken the earth from the roots, re-potted them in a clean, similar-sized pot, and plunged the pot, and gave a little warm water. After pruning down, I have placed such a plant in heat, that it might push before re-potting. I have also started the plant before either pruning or potting, deferring both until the shoots were a couple of inches or so in length, and then removing the upper ones gradually, leaving only as many near the base as I wished the plants to carry shoots and heads of flower; and I could hardly say which, after all, was most successful in producing well-grown and well-bloomed plants.

As, however, I am treating of the case of an amateur, who might never have room to grow a plant when older than two years of age; and as few things in small houses, be they warm greenhouses or plant-stoves, are more pretty at the end of summer than small plants of these *Clerodendrons*, in a five-inch pot, with a single stem, a foot or so in height, and terminating in a fine umbel, or spike of bloom; I will shortly state the mode I have frequently adopted to secure a fair sized specimen, and also a number of these pretty little plants; the best of all for future stock.

Supposing, then, that we have now got a nice plant, the soil in a dry state, but not so dry as to injure its one or several stems, from twelve to eighteen inches in length, the soft, unripened part of the end of the stem having been previously removed, I would place such a plant in the position referred to in the beginning of March, increasing the temperature gradually, and with that increase giving more dampings to the stem, and waterings at the root, with water about 80°. Ere long the buds will break into little shoots, and when from three-quarters to one inch in length, I would shake the old earth from the roots, pruning these roots only slightly, if any appeared worn-out or going to decay. Before doing this, however, I would have secured a nice clean pot, either of the same size, or most likely a less size, than the plant was grown and wintered in, drained it well, and had a compost of fibry loam and peat, with a little charcoal and silver-sand to keep it light at first; well aired and warmed, so that when trundling the soil among the roots they should receive no chill; a little circumstance, which many amateurs, and young gardeners, too, consider quite beneath their notice. Then, in such a bottom-heat as indicated, plunge the pot to its rim, water a little just to settle the soil, and give an im-

pulse to the roots to branch in it; but, until they do so freely, be rather chary of water at the roots, but limit the perspiring processes from the stem and young shoots, by frequent dustings from the syringe, and a slight shade in hot sunshine. Ere long, shoots and roots will act and react on each other, and the former will be coming away nicely. To the terror of the amateur who doats on a nice, compact, bushy specimen, he perceives that the upper young shoots are coming away strongly, while there is scarcely any movement in those at the base of the main shoots of last year. Now we are not at all alarmed, because this is just as we expected. As soon as two or three of these young shoots approach two inches in length, they are slipped off close to the old stem with a sharp knife, a few of the little bits of leaves at the base are removed, and then you have such nice, pretty cuttings, that even a grumbler could not say a word against them.

I often wish I could write as well as think about two or three things at one and the same time. The great London had so accustomed himself to concentration of thought, and had grooved his brain, as it were, into so many distinct channels, that he could dictate to several amanuenses, writing on different subjects, at the same time. Poor pigmies that we are; we can hardly give a hurried description of a simple process without getting somewhat confused. Just so with these pretty little cuttings, and the making of them so nicely. Something ought to have been done before. A clean three or four-inch pot should have been selected, half-filled with drainage, the one-quarter remaining be filled with sandy peat and loam, and the upper quarter with pure white sand. That three or four-inch pot should then be set inside of a five or a six-inch pot, and the space between them stuffed with clean moss; plunge the double pot then in the hotbed, and place a bell-glass in the space between the two pots, and let the whole remain long enough in the bed until all the contained matter is sufficiently warmed, before the cutting is taken off. Then insert two or three of these cuttings close to the sides of the inner pot; water, to settle the sand firmly about their base; when the tops are dryish, place the bell-glass tight on, in the space between the inner and outer pot, and take the precaution, after a few days, to lift one side of the glass a little at night, to admit air and prevent damping. Proceed in the same way, until going downwards you have gradually removed all the young shoots, except the two, four, or half-a-dozen, you intend to leave nearest the base; and to ensure equality of growth among them, you may find it necessary to pinch out the point of the upper shoots left, that the lower ones and they may start in the race with an equal chance of success. When these lower shoots are coming freely away, you may then cut off close to them the stripped stem, from which you have taken the shoots. By this plan you will secure some pretty, nice, young plants, at the expense of having your specimen older plant flowering some eight or ten days later than if you had pruned back at an earlier period.

Now, let us go back to this worthy old plant with which we started. It is growing away in a smaller, or a similar sized pot, compared with what it occupied last year. It seems to root freely; but the shoots come slowly, and you yet see little of those cabbage-like leaves in size that give such massive dignity to this tribe of plants. Never mind this a bit. If you have ever grown a Vine in a pot, in a hotbed, you will recollect how much more the rooting seemed to exceed the stem-lengthening and thickening process. Just so with these *Clerodendrons*. Secure good rooting, and rich feeding, and fine foliage, and large heads of bloom follow legitimately, as a matter of course.

Supposing, then, that the plant is in a smallish

pot, do not allow it to become root-bound *early*, or you will have an early show of bloom, when there is not strength to give either large heads of flowers, or large foliage at the base of the pyramid. As soon, therefore, as the roots get to the sides of a smallish pot, shift into a good size larger, and if a fine result is wanted, shift again. A pot from twelve to eighteen inches in diameter will grow a fine specimen. As soon as the roots begin to feel the sides of such a sized pot, the leaves will begin to increase in size; rich surfacings and manure-waterings should then be given, and while the heat is not reduced, more air should be imparted, and steam and damp be prevented resting on the leaves. The shoots should be tied out so as to have plenty of room, and before the flower-stem appears, the foliage should be at least fifteen inches from the glass, that there may be no danger of burnings and scaldings; and as the flower-head increases in size, and begins to open some of its flowers, the pot should not only be frequently twisted round, to prevent rooting through, but should gradually be raised out of the material in which it is plunged; doing this by bit and bit at a time, for a week or so, as a suitable preparation for removing the whole plant to a drier and cooler atmosphere. A warm greenhouse, or an intermediate house, are the best positions for retaining for the longest periods the beauty of the plant.

Then, with respect to those nice little cuttings: if shaded a little in sunshine, gently damped then, if they required it, and the bell-glass tipped up half-an-inch on one side at night, and put close down again at breakfast time, and the bottom-heat was as near 80° as possible, a little above rather than below, then, in the course of three weeks, or so, each of these cuttings would want a little pot for itself, and a four-inch one will generally be sufficient. Plunge that when potted; water, and shade from the brightest sunshine, and, ere long, you will require to give them a shift into a five, six, or seven-inch pot, and plunge again. When the roots come to the sides of the pot, give rich dressings or manure-waterings, and more air as soon as the flower-bunch appears, and raise out of the bed as the first blossoms open. When a good number are expanded, a closish greenhouse will then suit the plants well, and both in the case of these young, single-stemmed plants, and the older plants, the more sun the stems get in the autumn, with just sufficient water to keep them from flagging, the riper will the wood be,—the better will the shoots keep over the winter,—and the better will the buds start when subjected to a higher temperature in spring.

The kinds I have found to answer such treatment best, are *Fallax*, *Kempferii*, and *paniculatum*. *Deconium*, *Macrophyllum*, and *Bethaniana*, I have no doubt will answer equally well. The old, well-known native of China, the *fragrans flore pleno*, with its sweet flowers and leaves with the odour of ground peas, though hardy enough to thrive well in our greenhouses, yet succeeds much better under such treatment as described above, with the exception of giving a lower air temperature by five degrees, and a lower root temperature of ten degrees. Young shoots of these, struck quickly, also produce nice little heads of bloom, and half-a-dozen of these in an eight-inch pot, the plants scarcely more in height, would please those who like a mass of bloom on dwarf plants. Moss the surface of the pot, and none need be the wiser that you have six plants instead of one.

I have never grown *Bungei*, introduced or raised by the Messrs. Henderson. I believe that the whole aspect of the plant would say that its culture was easy, and that its proper position, when growing, would be a medium between what I have described as suitable for *Kempferii*, and the hardier *fragrans*, approaching nearer, however, to the latter in mode of growth, hardiness, &c.

I find I have so lengthened out these remarks, that I cannot well allude to other plants. I will, therefore, just glance at a few more circumstances that will make the article a little more complete.

1. *Soil*.—This has been already alluded to. Fibry peat and loam, lightened with bits of charcoal and silver-sand. As the plants get on in size, I prefer the last shifting to consist chiefly of sweet fibry loam, and nodules of old dried cow-dung.

2. *Propagation*.—One mode has been given. Another mode is to cut the roots, the strongish old parts, into pieces; cover them firmly with soil, and plunge into a brisk, sweet bottom-heat. When the shoots appear, they, and the roots attached, are treated as young plants. Plants are, also, easily raised from seed; sowing it as soon as ripe, or keeping it carefully until next spring. For quick-blooming plants, I prefer stubby side-shoots from the old stems, as already referred to.

3. *Enemies*.—The most prominent of these are three. First, a sealy insect, which requires to be rubbed off when it makes its appearance. It is least seen when the plants are plunged in sweet fermenting matter. Tobacco-water will kill it; but if not carefully used, and the leaves syringed with clear water shortly afterwards, it will also injure the leaves. The second is Green Fly, especially when the shoots are young. The remedy is fumigation. The third is Red Spider, and the remedies for that are sulphur fumes, arising from hot-water pipe or plate; the free use of the syringe, and a moist heat from the fermenting material. If the old shoots are well-ripened, all these evils will be mitigated by covering the shoots with a paint of clay and sulphur a week or so before the plants are put into heat. R. FISH.

MY NOTE BOOK.

HEATING CONSERVATORIES AND GREENHOUSES WITH GAS.

It has long been a desideratum with amateurs residing in villas having a conservatory or greenhouse attached to their dwellings, to be able to heat them by gas. I know this has been tried near London, and has failed, why, I could never understand; because heat applied to a boiler, whether from coal, coke, wood, or gas, amounts to the same thing, namely:—heating the water, and thereby causing a circulation; throwing off the heat into the area of the house, cooling the water, causing it to become dense, or heavier, whereby it returns to the boiler to be re-heated, and sent round again to give off a fresh quantity of heat, and so keep up the warm internal atmosphere.

I have now to inform the readers of THE COTTAGE GARDENER that I have seen, in two places, this desirable method accomplished with perfect success; and I shall, on this occasion, endeavour to explain how it is managed at both places.

There is a place called Widdrynton House, at Edgbaston, near Birmingham, belonging to John Radcliff, Esq. On the garden front, the entire length of the house, this gentleman (who is passionately fond of his garden) has put up a long conservatory, of a very elegant design, for the purpose of enjoying plants in flower. This house it was, of course, necessary to heat sufficiently to keep out the frost, and also to render it a comfortable promenade in cold weather. To do this in the ordinary way, by hot-water with a boiler heated by coals, would have been extremely objectionable, because of the room the stoke-hole would occupy interfering with arrangements of the garden, and also the difficulty of getting rid of the smoke. Mr. Radcliff's place is near to a road along which there are gas-pipes laid. Taking advantage of this, he had the gas brought in, and applied

to an upright, ornamental boiler *inside* the conservatory. The gas was applied to the bottom of the boiler by jets from a ring under it. This plan kept out the frost; but the gaseous vapours were very unpleasant, and injurious to the plants, so much so, that it was given up. The owner, nothing daunted by this failure, has, this last month, had a small square boiler fitted up *outside* the conservatory, with an ascending and return pipe attached to it. The gas jets applied under this boiler heat the water quickly, and send it rapidly through the house, keeping up a constant circulation as long as the gas is allowed to burn. There is now no scent of gas, and the house is warmed up to any moderate heat required. All that is required is to keep the boiler and pipes full of water, and to turn on and light the gas whenever heat is required. I have seen this, and can avouch for the practicability, safety, and economy of the plan.

The other instance is in the garden of J. Sinakiss, Esq., Waterloo Road, Wolverhampton. This I saw at work on the 29th of December last, heating a span-roofed greenhouse. The water circulated freely in pipes under the stage, which was of the same form as the roof. The boiler, a square one, was placed in the middle of the north end, partly under the wall and partly within the house. It was an open boiler, with a tight fitting lid. To see where the gas was applied to heat the water, I had to go round outside. I saw, on arriving there, what had the appearance of a common furnace door. On opening it the gas was visible issuing out of several holes from a circular ring pipe, heating the water very freely, as well as the air in the square space under it. This heated air Mr. S. thought might be made use of. He had, therefore, an upright zinc pipe carried through the boiler, and when through it two or three inches, turned at right angles through the glass into the open air. This heated the water still more, and made a less quantity of gas necessary.

Such is my brief account of two successful experiments of using gas as the power to heat water in the boiler and pipes of a conservatory and a greenhouse. My Note Book says both might be greatly improved by having the boiler made in the form usually called the saddle, and by having above the flames a pipe with a funnel end to catch the heat that would otherwise be wasted, and this pipe to be coiled round, and again inside the boiler, bringing the small end into the open air to carry off the effluvia of the gas. By having a boiler of large dimension, with stronger jets of gas playing against it, houses of large dimensions might be heated.

The advantages of gas are, that there are no coals to use, and no ashes to cause dust on the leaves of the plants, and the readiness of its application. On any sudden emergency, such as a frost or a cold wind, the gas may be turned on and lighted at once by any one that may be at hand. Nothing can be more convenient and easy. No doubt, many an ingenious mechanic could improve the methods and plans of the two instances I have given of using gas for the purpose of heating hot-houses, and I should be glad if some such an one would turn his attention to it. T. APPLEBY.

ROLLESTON HALL.

THE SEAT OF SIR OSWALD MOSELY, BART.

I HAD the pleasure of visiting this interesting place, near Derby, a few days ago, and was truly glad to note the progress many of the Coniferae have made.

I was informed, that last winter, on one particular night, the thermometer indicated 37° of frost, that is 5° below zero, and it is exceedingly interesting to mark

the effects of such an unusual severe amount of cold on various trees and shrubs. It is useful, too, in warning us what to expect if we plant largely comparatively newly-introduced plants; as for instance, some of the Himalayan Pines, *Cupressus torulosa* especially; whilst, on the other hand, we may be encouraged to cultivate, with perfect confidence, any trees, or shrubs, that will bear such a severe cold. The following have passed through this extreme ordeal totally uninjured.

Abies Douglasii, *A. morinda*, *A. Frazerii*, *A. Menziesii*; *Cryptomeria japonica* (this is a great fact); *Fitzroya patagonica*; *Forsythia viridissima*; *Picea pin-sapo*; *Pinus insignis*, *monticola*, *nobilis*; *Benthamiana ayacahuite*, and *Sabiniana*. This last-named is a truly noble tree here, and has improved greatly within the last two years; the last-made branches are much more densely clothed with foliage, and the leaves are longer. It is, I believe, allowed to be the finest specimen in Britain, *Pinus Lindleyana* has also proved hardy here, as well as at Chiswick. This is one of the handsomest of the Mexican Pines. *Savoytheca conspicua* is not injured in the least, neither is *Taxodium sempervirens* (this is also a great fact).

Injured a little, but partially recovered, is *Cedrus Deodara*. I was sorry to see this fine, elegant tree so much cut. Many of the branches are quite dead; but, as a matter to rejoice at, none of the trees are quite destroyed.

Injured severely, are *Araucaria imbricata*. One or two trees of it are quite dead, whilst others have their tops alive, but the lower branches destroyed. *Cupressus torulosa*, *Buxus balearica*, cut down to within three feet of the ground; but have, during the summer, sent out numerous young shoots.

Cupressus Lambertiana is killed; but let not the planter despair, because such fine trees as the Deodar and the Araucaria have suffered. If, because an extra hard winter has injured them in some places, we refuse to plant them, then we may give up planting the common Laurel, the Sweet Bay, and many others that we always call hardy. I have no doubt, in my own mind, that when those somewhat tender trees attain a considerable magnitude, they will bear our winters much better than they do whilst they are young and near the ground. It is a well-ascertained fact, that frost is more keen close to the earth than at a considerable elevation above it. At Rolleston Hall, the Laurels, the Laurustinus, Sweet Bays, and the old Catalpa were so much cut, that many of them had to be pruned down to the ground.

The hardy Fernery here is being enlarged. Some very interesting ruins of an old monastery, abbey, or church, were rescued from destruction, and have been fitted up as a ruin near to the Fernery, and combined with it. I know no hardy Fernery with so many interesting and different parts. In one place, the Ferns loving moisture are planted in a small dell; in another, the wild inhabitants of the rock have a suitable habitation; and in another place, such as love the shade have a home provided for them. Here I saw the rare Irish Fern, the *Trichomanes brevisetum*, growing in the open air, but in a dense shade under a bell-glass. Close to it, behind a stump, Sir Oswald has a bottle of water kept, and whenever he passes this thirsty Fern he gives it a sprinkling. A Wardian case is made use of to cultivate the *Hymenophyllum Tunbrigense*. It has a double cover, that is, the glass of the case and a bell-glass over the Fern pot. This case is also in a dense shade. To a lover of Ferns, this is as interesting a spot as any he ever met with.

I saw, in the front of the Vineries, a good kind of covering for the roots of the Vines. It is formed of frames, with boards nailed on them, like the slates on the roof of a house. These frames are nine feet long,

and three-and-a-half broad. They rest on the front wall, and on a strong spout in front, which spout carries off the water. In the house, I noted some excellent *Muscat* and *Black Tokay* Grapes, and also many fine bunches of the *Syrian* Grape. This, when well ripened, is an excellent fruit, and hangs long on the tree.

T. APPLEBY.

CUCUMBER FORCING.

(Continued from page 263.)

In following out the subject of Cucumber growing, it is proper now to say a little on the subject of soils, for much difference of opinion exists on that head, and we have often seen the most differing composts used with a fair share of success in both instances.

This would imply that other agencies were at work to correct the one, or mitigate the benefits of the other; for though some plants of robust habit grow freely enough in all kinds of soil, yet most plants have their favourite; and though it would be wrong to say they do not grow in an opposite one, yet they cannot be expected to thrive in it. A Heath would not easily flourish in a stiff clay nor chalky loam; neither would a marsh plant grow vigorously on a dry, heathy, or gravelly hill; but the Cucumber being so much the creature of art, a soil differing widely from that in general used will often produce a good crop of useful fruit; the benefit being due, more especially, to other agencies at work. We need not, therefore, be surprised at Cucumbers being grown in peat soil alone, while, at the same time, it is seen to flourish in a rather stiff loam, with only a very moderate share of lighter substance added, to keep the material from becoming too impervious to air and water; but, as in most cases the most successful practice will often be found midway between, so, in this, the generality of Cucumber growers prefer a light open soil, more or less rich in manure, in some shape or other, to peat or heavy loam alone; or, in fact, any other extreme mixture, as some enthusiastic growers have succeeded in. For instance, I have seen excellent fruit grown on plants whose roots ramified through a substance one-half of which was charcoal; this was, of course, in the "charcoal era," when that agent was thought, like "Morrison's Pills," or "Holloway's Ointment," a perfect cure for all the evils we had to complain of; but though charcoal is doubtless very good in its way, yet, like many other good things, it may be taken to excess; and I have a shrewd guess, the vigorous growth of the plants I saw luxuriating in it was, in a great measure, owing to other things, most probably liquid-manure, for charcoal is an excellent thing for absorbing such a fluid, which it would part with as wanted by the plant.

As we all know that plants of rapid and vigorous growth subsist, in a great measure, on liquid substances, it is only fair to suppose that those which contain the most nutriment in that shape, or are capable of receiving it from other sources, will be the soil in which "the Cucumber" delights to grow in; for we may class it among the "gross feeders," although differing, perhaps, in character from something to which that term is applied, for the health and vigour of the Cucumber is, in a measure, owing to the atmosphere in which it lives, as well as the soil or compost in which its roots are placed; and I have no doubt, but in the instances where an extreme soil was used, the atmosphere of the place was all that could be desired, serving, in fact, most of the purposes of the soil, and neutralising its inefficiency; for an atmosphere charged with moisture of an agreeable kind will maintain vegetable life a long time with but very little assistance from the soil in which its roots may be placed; but, be it remembered, such growths are

purely artificial, except amongst such plants as are aquatics, or nearly so; but many plants of an herbaceous character, or, perhaps, annuals, have the power to alter their character very much, and are often seen to live and even flourish under widely different circumstances; but it is almost needless to say the transition from the one to the other ought to be gradual, otherwise evil consequences will arise; and, as we all know an ordinary dung-bed, or bed made of other fermenting substance, emits a moist, vapourous fluid, mixed with gases,—the names of which are not here necessary to mention, but, when in the combined form that is congenial to vegetation, are generally known among gardeners by the term “nice sweet heat.” It is, therefore, in such an atmosphere as this that the Cucumber will live almost with its roots in sterile sand; but, be it remembered, that although it is in a highly artificial state in January, it is not so in May; for in the latter month the greater amount of sunshine, and the necessity for the admission of greater quantities of fresh air, render it impossible for the plant to live on “air” alone, as it may have been, in a great measure, doing when in the close “pent up” condition it was in during the dull days of winter or early spring.

I have entered into the above explanation, with a view to show that it is no proof of the soil in which winter Cucumbers grow in luxuriantly being the best for summer or general purposes. On the contrary, practice proves it not to be so; for I do not remember to have ever seen a good and lasting crop of fruit on compost in which charcoal or any similar substance was used to excess; neither have I ever seen a really good and long bearing crop produced on entire peat, for this material does not seem to have been intended by nature to maintain the gross and succulent herbage which a Cucumber presents for any great length of time, its nutritive powers being more speedily exhausted than other compounds, and death or disease overtaking the plant sooner than if it had been living in a more congenial soil. A similar remark holds good towards all other mixtures of an extreme kind, for they, like most “extremes,” owe their success to other causes than the one of soil; *i.e.*, when they are grown in a close frame; for some enthusiastic growers, in their rage for novelty, will grow them in mortar-rubbish almost alone, feeding them with liquid-manure; but it is needless to say that it is to the liquid food they owe their success, not to the hard, dry lumps of mortar-rubbish through which their roots are seen to ramify.

I confess having some little hesitation, at all times, in describing a soil or compost, although I have no doubt but the majority of readers might understand it. Now, the Cucumber delights in one of those most variable kinds of soil, which pass, in common “parlance,” as “a light rich one.” This, it is true, is but a poor description; and to extend it further, I may say, that a good maiden loam that had lain some months, and been frequently turned in fine weather, and the last few days been placed in some outhouse, or other place where poultry have access to it, will be found one of the most useful ingredients; observe, by the loam, I do not mean one of those stiff, adhesive kinds which cake hard in dry weather, but one which readily separates, and which has been obtained from ground known to be fertile. I mention the placing of it before poultry, in order that they may pick out any grub, wireworm, or other offensive object, which they do with great assiduity, and their services that way need not be confined to compost alone intended for Cucumber growing; however, when their services cannot be had, I would advise the little that is wanted for the first hill of Cucumbers to be carefully looked over, and if placed out-of-doors on some frosty nights, the freezing will have a good effect in thinning those depredators, for it is easy to place it so that every particle of it be frozen through.

In addition to this sort of soil, which ought to consist of quite three-fourths of the mass, a little leafy mould or other decayed substances may be added; dung will do, provided it be well decayed; to this I usually add some burnt material from an old rubbish heap where various things have been consumed. Sand may be added, if thought necessary, but I never find it so. But I must observe here, that it would be as well to have the whole compounded ere it be placed before chicken or otherwise prepared; at the same time, taking care that it is never used in a wet state, nor yet handled in any way while in that condition, for the very lightest of ground is sometimes injured by the undue compressing it receives when meddled with when wet.

Supposing the hotbed to exhibit no particular signs of over heating, and the warmth it has feels of that nice agreeable kind called a “sweet heat,” the compost may be put in to the depth of three inches all over the bed, and underneath each light hills or mounds may be made so that from the top of each to the dung a depth of twelve inches of soil may be had; this is ample for Cucumbers. Melons may be no worse with a little more; these hills, with the soil inside, &c., must be all well warmed by the heating material before the plants are put in, which is, however, done in a day or less, perhaps; the planting out then may be performed, and due care taken afterwards that the plants derive no injury from the pests noticed above, as well as many others which are tempted to feast on their young and tender foliage. Wood-lice are their worst enemy, and to catch them a cooked Potato wrapped round with moss is a very good trap, examining it and killing them frequently; a marrow bone is another useful attractor, and, as the most danger from these gentry is mostly at first, the amateur must not spare any pains to secure his plants. Their after treatment being of another kind, will be adverted to hereafter. J. RONSON.

THE LAST OF HIS LINE.

By the Authoress of “My Flowers.”

So many of my sketches have been taken from life among the lowly, that it may, perhaps, be thought the upper classes furnish no proofs of human depravity, nor that education, and the rules of refined society, make men better than they were born. Alas! this would be a great and fatal mistake. Education and society plane down the roughnesses of men; but they neither change the heart, nor preserve it from one taint of evil. Sin is no respecter of persons, though with some it may cross the stage with the flourish of trumpets. Unless the Spirit of God has cast out the Legion that dwells within us, Satan cares not for the robes or rags that clothe his victims; they are all his own.

Sir Charles B—— was a baronet descended from the first creation of that title; he was, consequently, a man of birth and blood. He had a fine property, an agreeable person, gentlemanly manners, and most things that constitute worldly felicity. His early history was singular. Being the younger son, he was brought up to the medical profession, and became a navy surgeon. He was with the fleet in the Mediterranean during its operations in the last war; studied the complaints of the eye, in Egypt particularly, and was almost unrivalled, in after days, in that branch of the science. He loved, and felt a deep interest in his profession; was very kind-hearted, and, had he continued in practice, must have “made a noise” among his brethren. But he was recalled to take possession of title and estate, in consequence of the death of his elder brother, who was shot by a friend’s hand, in a shooting party, whether accidentally, or otherwise, was never clearly made out. Sir Charles was warmly attached to this brother, and the event gave him extreme pain. It hung over him like a cloud for the rest of his life; there was something mysterious, as well as horrible, in it; and, perhaps, it was the first deep shadow

that had ever crossed his path. To a mind like his, it had peculiar fearfulness; for he was, alas! one over whom Divine Truth had no power. He was a free-thinker,—a fatalist. He knew nothing, believed nothing; and his poor mind scrambled about in darkness and ignorance, stumbling over this idea, trampling down that, and yet persisting in his inability to struggle against *fate*. Ah! if men would but ask themselves what *fate* really is! If they would but rouse their reason to inquire what that unconquerable power is that governs and subdues them, would not a light break into their dark minds, dim, yet appalling? Would they not feel the grasp of a *Hand*, the impulse of an *Arm*, plainly developed, though invisible?

During Sir Charles' wanderings and sailings along the romantic shores of Italy he had attached himself, or rather engaged himself, to a beautiful girl, who had given him her whole heart, poor thing. She had attached *herself* to an infidel, as many a woman has done, before and since, and rued it. On being summoned to England, he had taken leave of Marianne as his betrothed wife. He was to make all his necessary arrangements at home, and then hasten back to take possession of his bride, and bring her to grace his home, and share his British privileges. He was the bearer of some letter, or message, from an acquaintance abroad to a family in England, which he neglected to deliver till he was just going back again. Every thing was completed; his luggage packed up, and he only delayed, to deliver this letter with his own hand. He was sitting conversing with the lady to whom the visit was made, when a young and very pretty girl entered the room, and was introduced as the daughter of his hostess. The fatalist said in his heart, "That lady is decreed to be my wife," and all else was forgotten. Italy, Marianne, vows, affections, honour, even common humanity, were thrown overboard. He staid at the house; offered his base, infidel heart to another; was accepted, and married! Oh! if woman knew the serpent she often fosters! Oh! if she knew the mysteries of iniquity that are mantling and creeping behind the soft words and sighs she sits and smiles at! Oh! if she would but search the *opinions* of the man that asks her, with a probe no longer than her own needle, she would find things that ought to make her shudder, and ask herself, "what shall be in the end thereof?"

Poor Miss S——, however, knew nothing, and, therefore, had she asked, she would not have understood the reply. How many there are, in high life, and in low, who know, understand, and care for—nothing!

Sir Charles and Lady B—— began life with every earthly good. When we first became acquainted with them, they were living in a little poking house in a seaport town, with one dirty maidservant; shorn of all their beams; obliged to leave house, land, and friends; involved with some, who had taken them in, and others who had ill-used them. Sir Charles had an incoherency in his way of talking, that would never admit of any one understanding his affairs. He began; rambled on; never heard or answered questions; jumped from one thing to another, and seemed to be hunting a subject in his own mind, steeple-chasing it, and heeding nothing that interrupted him. From Lady B—— alone could any conclusion be arrived at; and her brother, and a mischief-making wife, seemed to be deeply involved in the mystery, though poor Sir Charles, with his fatalism and wrong-headedness, had helped to work out his own ruin. Family affairs are difficult to make plain; but it was all sufficient that the last baronet of his line was living unknown and unheeded, in a small house, built against the face of a cliff, so that you entered it upon the parlour floor, went down to the bedrooms, and deeper still to the kitchen, below which the sea dashed and trembled, and the sea-bird screamed and dipped its rapid wing, and the evening gun boomed from a fort built on a pile of rocks that stood out from the mainland. It was a scene of wild and stirring beauty, and Sir Charles loved to pace a little terrace walk in his narrow strip of garden at the foot of his tall house, when the sea dashed over the wall, and the moon "walked in brightness." What were his thoughts? What could the thoughts of an infidel be? Alas! he could not, like Job, lay his hand upon his mouth, and listen to the Voice that spake in every object round him! He could not perceive Him "without whom was not anything made that was made." He might, indeed,

feel that a "consuming fire" dwelt in the highest heaven; but he could not approach Him; he could not "see the light of the knowledge of the glory of God;" because he beheld it not "in the face of Jesus Christ." I trust that none of my readers can understand the darkness of the mind that knows nothing, hopes nothing, comprehends nothing! Such a mind may *think* that it *fears* nothing; but where there is no sure hope, there must be deep and mysterious dread. Oh that men would turn from their wickedness and live! "The wise man's eyes are in his head: but the *fool* walketh in darkness."

(To be continued.)

NOTES FROM PARIS.—No. 5.

CONSTRUCTION OF FRENCH BOUQUETS.

If there is any way of doing a thing neatly, easily, and effectively, a Frenchman is sure to find it out. Nobody else so well understands the *luxury of work*, if I may so speak. Evidences of this fact strike the eye at every turn here, in every shop, in every atelier, and even in the very street. Some people say that there are many ways of doing a thing, but the Frenchman believes there is only one way of doing it well, and he spares no effort to get at it. Nor will he allow any prejudice against what are sometimes called "new fangled schemes," to deter him from adopting what he considers the best mechanical contrivance for any given purpose. No matter how trivial the work may be, no matter how insignificant the object, his first consideration is the best possible way of doing it. The question involved in Mr. Beaton's remarks on one of my earlier communications, might, to many persons, seem unworthy of notice, though I have viewed the matter in a different light. What ingenuity or art can the simple process of putting a few flowers together admit of? "Certainly there is some taste required to arrange the colours, and give the bouquet a particular form; but as for putting the flowers together, surely any person with two hands can do that." This way of talking, for it cannot be called thinking, is common with those who believe there never was anything invented that proved so good as "elbow grease," and no skill in working equal to the art of putting one's "shoulder to the wheel;" "down with your contrivances and dodges." But, now, as our old and long-tried *wheel* is getting every day more and more difficult to move, and, in fact, as it leaves us so often in the lurch, we may surely be excused if we turn, now and then, for help in another direction. Any gardener in England can put up a flower. It may be pretty, or it may not. The flowers may be well selected, and the colours tastefully arranged, but it is only necessary to look on for a few minutes, while the work is being done, to be convinced that the mere art of constructing it has never been thought of.

There are, first, the painful twistings and groupings with one hand, while the flowers are put in their places with the other, and if the bouquet is large, it scarcely admits of being turned or shifted in the hand, so as to be examined. This circumstance has, probably, led to the sloping one-sided form which is generally given to English bouquets. And, then, after being propped on all sides with twigs and branches, it must be kept upright, otherwise the flowers are apt to fall out. Mr. Beaton has compared the constructing of a bouquet to the building of a house. Now, as the test of a well-built house is its resistance to wind and rain, suppose we continue the figure, and try a bouquet in the same way. Suppose we tie our bouquet to a string at the handle, and whirl it in the air once or thrice, as a boy whirls a sling. If the flowers do not fall out, it may be concluded that the bouquet has been well made; but I question if many bouquets constructed in the ordinary way would stand this test. Very true, a bouquet is not made to be treated in this manner; but when we find that the French bouquets will suffer such treatment, the most reasonable inference is, that the mode of constructing them is somewhat different to that adopted in England.

What, then, is the Parisian's secret of making up a bouquet? Nothing can be more simple, and, when attentively considered, nothing would seem more indispensable than the machinery used—a bit of string. That is all that

forms the nails, hinges, clasps, glue, scaffolding, and other instruments of construction. But this string is attached to the very first flower used in the formation of a bouquet; as soon as one or two more flowers are added, the string is passed round them a few times, and then held by the thumb till a another is pressed against it, which keeps it in its place. In this way the flowers are continued, and the string is passed round every fresh layer, so to speak, till the whole bouquet is completed. It will be easily perceived, that according to this plan it is easy to keep the flowers in their places, and yet turn the bouquet with perfect ease in any direction that may be required, while, at the same time, there is little or no probability of the flowers dropping out, because they are all tied to one another. In order to command every facility of turning and examining the bouquet while in course of construction, it is sometimes stuck upon an iron prong secured to a dressing-board, and this latter expedient enables the person making it up to use both hands in arranging and separating the flowers of which the bouquet is being made. It also enables him to put it down and take it up at any moment, and it is always easy to secure the string by giving it a few extra turns.

The string used in the formation of a bouquet is fine and strong; not thick, because the under part of the bouquet would be clumsy and difficult to grasp; not too fine, because it would be always liable to break. A fine sort of whip cord is very good for the purpose. So, also, is the fancy cord generally used in shops. But descriptions, to be of any use in some things, can only be carried to a certain extent, and the art of making up a French bouquet is to be learned chiefly by practice, and a careful study of the leading points I have stated in this and my former communication on the same subject. I would just add here, that it is never necessary to stick in flowers at the surface, unless it happens, indeed, that by some oversight or other they have been forgotten, for when working according to the French principle, the person constructing the bouquet can always make sure of what he is about. If, however, it be found desirable to put in flowers at the surface, after the bouquet is completed, that can be done by an instrument made for the purpose. There is another advantage worth pointing out, in connection with the string, that is the facility for working in a little damp moss between the stalks, when it is desirable to prolong the freshness and beauty of the flowers. But, apart from this consideration, moss may be sometimes used for the purpose of "filling up," in order to obviate any undue bending of the stalks, especially in large bouquets, but in this case it is, of course, only used below the flowers.

The outer part of bouquets here is generally formed of Fern leaves, but sometimes twigs of Acacia, Hemlock Spruce, Myrtle, and similar plants are also used, though rarely; for, in fact, the flowers do not require anything to keep them in their places in addition to the string with which they are worked together. But no bouquet is ever seen here without a sheet of clean white paper round it.

THE WEATHER.

For the last month the weather has been damp, dismal, dull, and dirty. We have had, now and then, a fine, dry day, but rain has been more than usually abundant. A considerable quantity of snow fell towards the end of November, and, subsequently, one or two touches of frost were felt.

PUBLIC PROMENADES.

The Parisians have nothing in the form of parks, such as those at London, but though they seldom get a stroll upon "the greeny greeny grass," they have no lack of promenades, both in and out of town, at almost all seasons. If the weather is fine, they have the long lines of broad pavement, and rows of trees, which form what are called the inner and outer Boulevards. The former extend from the "Place de la Bastille," near the eastern extremity, to the church of the Madeleine, about two miles eastward, in a circular direction. The inner Boulevards, in fact, consist of a long, wide street, with rich shops and dwelling-houses on each side. The footway is from twenty to thirty feet wide; in some places forty feet wide; and there are trees at convenient distances. This line of street, which, in some respects, may be compared to Regent-street, London, but much finer, is the favourite promenade and lounge of all

classes here. The outer Boulevards, immediately on the other side of what is called the *barrier*, extend all round the capital, and, in some places, assume the appearance of an avenue of old Elms, whose lofty heads form at once a shelter and a shade. In summer, these avenues resemble a long road on the skirts of an English forest. There is an obvious adaptation in all things. The Parisians are fond of walking about. Their fine climate favours this idle predilection, and they never need go far to enjoy themselves in the open air, when the weather is fine, or under cover when it is not; for, besides the Boulevards, which are easily accessible to all, there are many open *Places*, dotted here and there, which afford an agreeable promenade, and these are generally enlivened by the presence of ornamental trees. The whole line of the *Seine*, too, on each side, has its broad footways, and its rows of Oaks, Elms, Alders, and Planes.

Besides these numerous facilities for out-of-door enjoyment, the Parisians have always access to the *Jardin des Plantes*, the *Jardin des Tuilleries*, the *Jardin du Luxembourg*, and, in short, every other garden of any consequence. What is called the *Avenue des Champs Elysée*, and the *Bois de Boulogne*, form so many miles of promenading ground. The *Jardin des Tuilleries* consists of fine, broad avenues, with lofty old Elms, Planes, and other trees also, a few flower clumps, and a great many statues of celebrated persons, as well as ideal productions in art. This garden has the Palace of the *Tuilleries* at one end, and the *Place de la Concord* at the other. The latter is remarkable for its large fountain and statuary. One side of the garden is the *Seine*, and on the other the *Rue de Rivoli*, noted for its fine buildings, and its English Hotels.

The *Jardin du Luxembourg* is situated towards the south-eastern extremity of Paris, and, besides being a favourite promenade, contains upwards of a hundred large, old Orange-trees, in boxes, placed at about ten feet apart, on each side of the broad walks, during summer. When in flower, these trees produce such a perfume as to be perceptible at a considerable distance. Being somewhat near the chief colleges and schools, this garden is the favourite resort of students, who, in the calm summer evenings, while meditating on the deep problems of science, or the principles of art, can inhale the fresh air amidst the most soothing influences.

The *Bois de Boulogne*, which may be likened to Kensington Gardens, but more artificially laid out, has lately undergone several important alterations and improvements, the principal of which has been the formation of an artificial river or lake, somewhat like the Serpentine, but having one or two cascades of considerable volume. While these works were going on, in the earlier stages, several large trees had to be removed, and the operation of lifting and transplanting them employed a great many workmen for more than a week. Among the largest trees moved was a fine Cedar of Lebanon, about thirty years old, and the removal of which was a work of much time and labour, for this tree was lifted with a more than ordinarily large ball, and the work was new to those who took it in hand.

I have mentioned promenades under cover, but it is not my province to speak of these at length. I will, therefore, dismiss the subject in saying that there are, throughout Paris, a great number of spacious Arcades or Bazaars, called here "Passages." These are similar to the Arcades of London, but of far greater extent, well lighted, and remarkable for their shops of rich fancy goods. The principal of these are the "Passage des Panoramas," the "Passages de l'Opera," and the "Passage du Palais Royal," where there is also a large plot of ground studded with young trees. The Passages are favourite resorts, especially when the weather is not very inviting out-of-doors, and nothing can exceed their aspect of comfort and splendour. As a great part of Paris is built over catacombs, we may also say that much of it is under glass.

TREE LIFTING.

But now to come to a subject of, perhaps, greater interest to your readers, I may notice that Mr. Mc Glashen, of Edinburgh, has been here for some six or seven weeks, performing experiments with his patent tree-lifting machines. One of his first exhibitions was at the Garden of St. Cloud, in the presence of the Emperor, the Empress, and many distinguished members of the *haute noblesse*, including the

Marchioness of Douglas and the Duchess of Hamilton. The weather was fine, and the operations of lifting the several trees selected were performed in a very short time, to the entire satisfaction of all present, and the Emperor was pleased to order the machines used, consisting of a set of four, of different sizes.

A second exhibition took place under the auspices of the Imperial Society of Agriculture, at the *Jardin des Plantes*, in the presence of a commission appointed to report upon the merits of the invention. On this occasion, by the express desire of the Emperor, Mr. Mc Glashen was permitted to use the same machines as employed at St. Cloud. The smaller trees, chiefly evergreens, were lifted and transplanted very easily in a few minutes. The largest tree had been chosen by M. Decaisne, to test the strength of the machine used. It was a *Kalbreuteria*, about forty years old, with a stem eleven inches diameter at three feet from the ground. To all appearance it was firmly rooted, for its position was near the centre of one of the avenues which form the promenades of the Garden. Besides, it was evidently too large for the machine, the "fulcrum frame" of which was not more than fifteen inches from the stem, and, therefore, the roots, at the point of cutting, must have been more than usually thick. However, as soon as the apparatus was fairly placed, a few turns of the screws detached it from its bed, and in less than an hour the whole operation of lifting and transplanting it, at a distance of 180 yards, was completed, to everybody's satisfaction. On the whole, Mr. Mc Glashen seems to meet with much encouragement here, and had his invention been known eight or ten months sooner, when so many trees were being lifted, his machines would have been most likely used to a considerable extent.

ACADEMY OF SCIENCES.

The general meeting took place on the 18th of December, when several biographical discourses were delivered by M. Guizot, and other distinguished members. In the botanical section, M. Payer was elected to fill the place of M. Goudichand, lately deceased. Besides M. Payer, who obtained a large majority, M. Trécal, M. Chatin, and M. Duchartre, were also nominated.

I may notice, in this place, that the death of Dr. Webb, and, latterly, Professor Forbes, has been painfully felt in learned circles here.

JARDIN DES PLANTES.

The *Victoria Regia*, and also the *Euryale ferox*, in the Aquarium, have both died, though it was hoped they would live through the winter. The circumstance has led botanists here to regard these fine Aquatics as merely annuals. An opinion which has for some time been entertained among the best authorities in England.

THE MARKETS AND FRUIT-SHOPS.

Since my former dispatch, a few Pine-apples and Plantains have appeared in the shops of one or two of the principal dealers; but Apples and Pears are the chief commodity in the fruit way, though even they are now very dear. Of the former, the *Reinette de Canada* takes the lead, on account of its size, beauty, and flavour. The best samples of this Apple measure fully four inches in diameter. The most noticeable of the Pears are the *Beurré Rance*, the *Beurré d'Arcberg*, and the *Poire du Cure*. The last has the general form of the *Jargonelle*, but it surpasses all I have yet seen for size, most of the samples measuring six inches long, and I have seen some fully seven inches long. When well ripened, it is beautifully coloured, and dotted with red. Apples and Pears, however, of any merit, are not to be had at present for less than ten or fifteen sous.

Truffles and Mushrooms are now becoming plentiful. The popular way of cultivating Mushrooms here, is in vaults and caverns under the ground, where seldom a single ray of natural light enters, and where the workmen are furnished with lamps and torches. This plan was first adopted by a market-gardener named Chambry, and his example is now generally followed. The Mushroom-beds are arranged in long parallel rows, about two feet in height, and rounded off at the top similar to a Celery ridge. In other respects, the mode of culture differs but little from that generally

practised in England. It is stated, on good authority, that more than eight millions of baskets of this esculent are sold yearly in the Paris markets, and the value of which is not less than sixteen hundred thousand francs. It is also found that a Mushroom-bed in the open air will produce a supply during two or three months; but under ground, the same amount of surface will furnish a supply for four or five months.

Beet-roots are in much demand, at present, for salads, and mixed with the other ingredients used in this way, are much liked, cut in thin slices. There is no lack of Cresses and Endive, but the favourite for a choice salad, just now, is the common Dandelion, the leaves of which, when properly blanched, and dressed with oil, make a very palatable dish. I cannot very well explain why this plant is selected for such a purpose, at such a season, but there it is, as crisp and yellow as the heart of a Lettuce.

Another vegetable in particular favour with the Parisians is the Cardoon, and it is just in season. It is boiled and served with sauce, as a separate dish. Some excellent samples of Brussels Sprouts and Savoys are also plentiful at present. French Beans, called here *Haricots*, are likewise in great abundance, and much used amongst the people, as they are both cheap and wholesome. But Chesnuts are the greatest favourites of all with the lower classes at present, and they are cheaper than Filberts in London.

The popular way of cooking Chesnuts is that of roasting them on a hot plate, and in the streets here there are people at every turn, with this apparatus, roasting Chesnuts for all comers. There is scarcely a Cabaret but has its Chesnut-roaster at the door, not on the pavement, or at the gutter, but inside, under shelter, and the patronage and protection of the landlord. The Chesnut, then, is clearly the crack fruit of the day, and well it may be, for, when properly cooked, it is very pleasant to the taste, besides being wholesome and nutritious. It is often used, too, in broils and stews, but only after being roasted. I have even seen Chesnuts prepared with sugar, as a kind of sweetmeat, and served as a dessert.

The best samples of Chesnuts here are more than usually large and well flavoured, and vast quantities of every quality and description are every year received from the more southern departments, as Lyons and Nantes. Chesnuts seldom or never attain anything like the usual size or flavour when grown in the latitude of Paris, and though the tree is allowed to be a native of Spain, it is found to thrive as well in the south of France, as in the neighbourhood of Barcelona. I am told, by one of the principal exporters here, that the Chesnuts sent from Paris to England, and other countries northward, are almost without exception grown in the middle and southern departments of France. No doubt, both Spain and Portugal also export largely, but, as it would appear, not by the overland route.

The fruit of a *Mespilus*, very like *Germanica*, is also at present much eaten, and the Quince is prepared in a particular manner as a preserve.—P. P. KEIR.

MANCHESTER POULTRY SHOW.

This was held in the Free Trade Hall, from December 29th to January 2nd. It is probable, that in no part of this country have poultry amateurs and breeders more difficulties to contend with than in Lancashire. The general ungenial character of the spring season, and natural coldness of the clay soil, are greatly detrimental to the production of strong and early chicken; and the great value of the land, in most cases, prevents amateurs having extensive, or even convenient walks, to say nothing of the injury done to all light-coloured birds by the soot and smoke produced by the over-spreading manufactories of that wealthy county; besides, but few can find leisure to devote such time to the poultry fancy; still, a small band of ardent amateurs does exist, and though their first essay last season was an unremunerative one, they determined to hold another this year; and as an incentive to public support, determined to devote all the surplus arising for the Show to the Royal Patriotic Fund, and we sincerely trust that they will have a

handsome balance to pay over. We regretted to see so poor an attendance of the wealthy classes on the first two days, as the committee had purposely reserved a few hours for their convenience at a higher rate of entrance; but the "mobility" slightly made amends for their better, by a crowded attendance at a lower charge; and we would strongly urge all poultry show committees to rely on securing a more general attendance by charging a moderate price.

Taken as a whole, the attendance was miserably poor, and the whole receipts in the four days were less than in one day of the last show. We hear that the Committee will be saddled with a heavy loss; almost £400.

As the pens were of a novel description, we must first say a few words in their favour. They were provided by the patentee, B. Greening, and have a very light and airy appearance, and are, in every way, superior to the old-fashioned wooden partitioned pens; the woodcut of their advertisement will give the best idea to those of our readers who have not seen them; and we would suggest, that it would be an improvement to have the screen at one side a little larger, for the birds can reach round them, and where two cocks are of the same mind, it is easy for them both to give and receive much damage: they greatly add to the general appearance of a show, and the blue screens and blue division curtain between the double rows produced a very pleasing effect, very different to the formal rows of double boxes. These pens, being portable, also enable the judges to place closely-competing pens together, and the judges frequently availed themselves of this advantage, and must have had a pleasing sight when they had all the prize pens of each class of Dorkings in a row. Before awarding the Silver Vase, our readers will see that the judges pronounced the whole of several classes to be "highly meritorious"; and we heard it remarked, that five pens of young *Dorkings* were so closely matched, that it was difficult to detect the best. The *Spanish* were particularly good; and the *Cochins* very superior to those exhibited last year. The *Game* fowl fully supported their Lancashire character; but the *Hamburghs*, in all classes, did not exhibit those very superior birds for which Lancashire used to be celebrated; we fear that their fanciers are suffering from "breeding in," and the want of fresh blood. The *Polands* and *Bantams* were fairly represented, Mrs. Parker's *Geese*, as usual, outweighed all their competitors; and the *Ducks* were so good, that the Rouens from Knotty Ash had to be content with a commendation. Lancashire is not a good county for *Turkey* breeding; still, there were five good pens shown. We were sorry to hear that several "roupy" birds were sent for exhibition; and one or two cases were so bad, that the committee packed up and returned the birds. Surely, some plan ought to be devised to punish parties for sending diseased birds to shows.

The judges were Messrs. Hewitt and Challenor, and, with their customary ability, gave general satisfaction to the exhibitors, although they had to remain a second day at the show, to investigate a protest made by the owner of a Spanish hen, in pen 630, which they had disqualified for having had her face tampered with; they confirmed the disqualification, and drew stumps of feathers from her face, which plainly showed the cut marks on being examined with a microscope.

27. SILVER VASE.—FOR THE BEST PEN OF SPANISH.—Peter Eden, Cross Lane, Salford.

107. SILVER VASE.—FOR THE BEST PEN OF DORKING.—William Wright, West Bank, Widnes, Warrington.

253. SILVER VASE.—FOR THE BEST PEN OF COCHIN.—Alfred Sturgeon, Elms, Grays, Essex.

Class 1.—SPANISH.—Cockerel and two Hens.—12. First prize, Henry Openshaw, Wilton Polygon, Cheetham Hill. 10. Second prize, John S. Henry, Woodlands, Crumpsall, near Manchester. Very Highly Commended.—3. Peter Eden, Cross Lane, Salford. 4. Joseph Allison, Friar's Place, Acton, Middlesex. 9. John S. Henry, Woodlands, Crumpsall, near Manchester. Highly Commended.—13. Michael Potter, Prestwich, near Manchester.—19. James Webster, New Briten, Eccleston, Prescot. 26. Rev. Stephen Donne, Oswestry. Commended.—2. A. Mc. Nicol, Cathcart-street, Birkenhead. 23. John Mills, Ovenden, near Halifax. (An unusually excellent class.)

Class 2.—SPANISH.—Cockerel and three Pullets.—27. First prize, Peter Eden, Cross Lane, Salford. 40. Second prize, William Plummer, Brislington, near Bristol. Highly Commended.—42. William Plummer, Brislington, near Bristol. 46. Edward W. Wilmot, Hulme Walfield, Congleton. Commended.—48. John S. Henry, Woodlands, Crumpsall, near Manchester.

Class 3.—SPANISH.—Cockerel and one Pullet.—70. First prize, William Plummer, Brislington, near Bristol. 71. Second prize, William Plummer, Brislington, near Bristol. Highly Commended.—55. George Fell, Springfield, Warrington. 59. G. A. Gelderd, Aikrigg End, Kendal. 72. William Plummer, Brislington, near Bristol. Commended.—61. Benjamin Jackson (cottager), gardener at Irwell House, Prestwich. 79. Rev. Stephen Donne, Oswestry.

Class 4.—DORKING (White).—Cock and two Hens.—81. First prize, Mrs. Jennens, Moseley, Birmingham. 82. Second prize, Mrs. Jennens, Moseley, Birmingham.

Class 5.—DORKING (White).—Cockerel and three Pullets.—85. First prize, George Fell, Springfield, Warrington. 86. Second prize, Mrs. Jennens, Moseley, Birmingham. Highly Commended.—89. W. Manfield, junr., Dorchester, Dorset.

Class 6.—DORKING (Coloured).—Cock and two Hens.—107. First prize, William Wright, West Bank, Widnes, near Warrington. 97. Second prize, G. A. Gelderd, Aikrigg End, Kendal. Very Highly Commended.—113. Rev. Stephen Donne, Oswestry. Highly Commended.—103. Daniel Parsons, Cuerdon, near Preston. Commended.—91. E. Lister, Cassia Lodge, near Northwich, Cheshire. (An excellent class.)

Class 7.—DORKING (Coloured).—Cockerel and three Pullets.—156. First prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley. 148. Second prize, William Wright, West Bank, Widnes, near Warrington. Very Highly Commended.—115. Wm. Whitwell, junr., Tolson Hall, Kendal. Highly Commended.—121. Countess of Chesterfield, Brethly Hall, near Burton-on-Trent. 127. Miss Grimshaw, Swinshaw, near Rawtenstall. 136. Daniel Parsons, Cuerdon, near Preston. 141. Joseph Whitworth, The Firs, Fallowfield, Manchester. Commended.—134. Michael Potter, Prestwich, near Manchester. 158. Rev. Stephen Donne, Oswestry. 161. Rev. Stephen Donne, Oswestry. Disqualified.—120. Countess of Chesterfield, Brethly Hall, near Burton-on-Trent. (Cock, an old bird.) (The whole class meritorious.)

Class 8.—DORKING (Any colour).—Cockerel and one Pullet.—186. First prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley. 170. Second prize, Lord Robert Grosvenor, Moor Park, Rickmansworth, Herts. Very Highly Commended.—187. Mrs. Thomas Townley Parker, Astley Hall, Chorley. Highly Commended.—163. Daniel Harrison, Singleton Park, near Kendal. 168. Colonel Clowes, Froxmer Court, Worcester. 173. Michael Potter, Prestwich, near Manchester. 179. Joseph Whitworth, The Firs, Fallowfield, Rusholme. Commended.—162. Charles Storr Kennedy, J.P., Fair View, Ulverston. 171. Robert Lodger, The High Beeches, Crawley, Sussex. (The whole class very good.)

Class 9.—COCHIN-CHINA (Cinnamon and Buff).—Cock and two Hens.—198. First prize, Robert Worthington, Crumpsall Hall, Manchester. 197. Second prize, Robert Worthington, Crumpsall Hall, Manchester. Commended.—188. Rand Turton, Dudley Road, Wolverhampton.

Class 10.—COCHIN-CHINA (Cinnamon and Buff).—Cockerel and three Pullets.—253. First prize, Alfred Sturgeon, Elms, Grays, Essex. 216. Second prize, Hon. and Rev. H. Noel Hill, Berrington, Shrewsbury. Very Highly Commended.—251. Rev. Stephen Donne, Oswestry. Highly Commended.—211. R. Edward Ashton, Ramsbottom. 231. Alfred Sturgeon, Elms, Grays, Essex. Commended.—233. Henry Tomlinson, Ballsall Heath Road, Birmingham. 232. Thomas Stretch, Marsh Lane, Bootle, Liverpool.

Class 11.—COCHIN-CHINA (Brown and Partridge-feathered).—Cock and two Hens.—256. First prize, William Wanklyn, junr., Greenbank, Bury, Lancashire. 254. Second prize, Colonel Clowes, Froxmer Court, Worcester. Disqualified.—255. Francis Bake Webster, Manufacturer, Heckmondwike, near Leeds. (A Hen too many.)

Class 12.—COCHIN-CHINA (Brown and Partridge-feathered).—Cockerel and three Pullets.—268. First prize, Captain William Henry Snell, St. Swithin's Lane, London. 262. Second prize, John Bell, Wm. Rhodes, Esq., Thirsk. Very Highly Commended.—267. Richard Swift, Southwell, Notts. Highly Commended.—259. Peplow Cartwright, Oswestry. 263. John Bell, Wm. Rhodes, Esq., Thirsk. 269. Francis Bake Webster, Manufacturer, Heckmondwike, near Leeds.

Class 13.—COCHIN-CHINA (White).—Cock and two Hens.—271. First prize, Cyrus Clark, Street, near Glastonbury, Somerset. 273. Second prize, Mrs. Herbert, Powick, Worcester.

Class 14.—COCHIN-CHINA (White).—Cockerel and three Pullets.—281. First prize, Alfred Peters, Wolverhampton. 286. Second prize, Mrs. Herbert, Powick, Worcester. Commended.—276. William Ashford, Wheeler-street, Birmingham.

Class 15.—COCHIN-CHINA (Black).—Cock and two Hens.—294. First prize, Thomas Smith, Stableford, near Bridgnorth. Disqualified.—293. Mrs. C. Ellis, Miles Platting, Manchester. (A Hen too many.) Second prize withheld.

Class 16.—COCHIN-CHINA (Black).—Cockerel and three Pullets.—299. First prize, William Wanklyn, junr., Greenbank, Bury, Lancashire. 298. Second prize, William Wanklyn, junr., Greenbank, Bury, Lancashire. Highly Commended.—296. The Hon. and Rev. H. Noel Hill, Berrington, Shrewsbury. Commended.—302. Thomas Smith, Stableford, Bridgnorth.

Class 17.—GREY SHANGHAI, OR BRAMAH POOTRA.—Cock and two Hens.—303. First prize, Joseph Allison, Friars' Place, Acton, Middlesex. 304. Second prize, William Cust Gwynne, M.D., Sandbach, Cheshire.

Class 18.—GREY SHANGHAI, OR BRAMAH POOTRA.—Cockerel and three Pullets.—311. First prize, Mrs. Stow, Bredon, near Tewksbury. 308. Second prize, Rev. George Calvert, Beeby, near Leicester.

Class 19.—COCHIN-CHINA (Any colour).—Cockerel and one Pullet.—329. First prize, Robert Worthington, Crumpsall Hall, Manchester. 325. Second prize, Edward D. Swarbrick, Sowerby, near Thirsk, Yorkshire. Highly Commended.—318. George C. Peters, Chailton Cottage, Moseley, near Birmingham. Commended.—317. William

Dawson, Hopton Mirfield, near Dewsbury. 322. Captain William Henry Snell, St. Swithin's Lane, London. 330. William Wright, West Bank, Widnes, near Warrington. Disqualified.—314. Frederick Middeffell Hindle, Bury New Road, Haslingden. (A Hen too many.)

Class 20.—MALAY.—Cock and two Hens.—339. First prize, W. Manfield, junr., Dorchester, Dorset. 337. Second prize, James Leighton, 183, High-street, Cheltenham.

Class 21.—MALAY.—Cockerel and three Pullets.—346. First prize, W. Manfield, junr., Dorchester, Dorset. 341. Second prize, James Leighton, 183, High-street, Cheltenham.

Class 22.—GAME FOWL (White and Piles).—Cock and two Hens.—347. First prize, Henry Felthouse, Tamworth. 351. Second prize, Thomas Walters Hill, Holly Bank, Heywood.

Class 23.—GAME FOWL (White and Piles).—Cockerel and three Pullets.—355. First prize, Robert Choyce, Bramcote Hall, near Tamworth. 352. Second prize, Henry Felthouse, Tamworth.

Class 24.—GAME FOWL (Black-breasted and other Reds).—Cock and two Hens.—366. First prize, William Cox, Brailsford Hall, Derby. 368. Second prize, Joseph Bamforth, Holmfirth. Highly Commended.—372. John R. Rodhard, Aldwick Court, Langford, near Bristol. Commended.—377. James Dixon, North Park, Horton, near Bradford.

Class 25.—GAME FOWL (Black-breasted and other Reds).—Cockerel and three Pullets.—379. First prize, Samuel Armitage, Thornton Road, Bradford, Yorkshire. 386. Second prize, Charles Brown, Sherlock-street, Birmingham. Highly Commended.—378. Frank Reynolds, Potter-street, Bedford. Commended.—391. Edward Stansfield, Dewsbury. 393. James Dixon, North Park, Horton, near Bradford. Disqualified.—390. Theed William Pearce, Bromham Road, Bedford, Beds. (Hens marked on the leg with tape.)

Class 26.—GAME FOWL (Black and Brassy-winged, except Greys).—Cock and two Hens.—400. First prize, Samuel Taylor Smith, Park Lane, Madeley, Shropshire. 396. Second prize, Joseph Jennens, Moseley, Birmingham.

Class 27.—GAME FOWL (Black and Brassy-winged, except Greys).—Cockerel and three Pullets.—401. First prize, Samuel Armitage, Thornton Road, Bradford, Yorkshire. Disqualified.—403. Edward Farmer, Great Spark Brook, near Birmingham. (A Hen short.) 407. J. Jennens, Moseley, near Birmingham. (A Hen short.) Second prize withheld.

Class 28.—GAME FOWL (Duckwings and other Greys and Blues).—Cock and two Hens.—412. First prize, William M. Marriott (cottager), Boothroyd, Dewsbury. 414. Second prize, John R. Rodhard, Aldwick Court, Langford, near Bristol. Highly Commended.—413. Theed William Pearce, Bromham Road, Bedford, Beds. Commended.—411. Matthew Leno, junr., Hemel-Hempstead, Herts.

Class 29.—GAME FOWL (Duckwings, and other Greys and Blues).—Cockerel and three Pullets.—421. First prize, J. H. Smith, Skelton Grange, York. 419. Second prize, John R. Rodhard, Aldwick Court, Langford, near Bristol. Commended.—417. Francis S. Bullock, Ilkley, Yorkshire.

Class 30.—GOLDEN-PENCILLED HAMBURGS.—Cock and two Hens.—428. Second prize, Rev. T. G. M. Luckock, Upper Berwick House, near Shrewsbury. Disqualified.—422. Alfred Barton, Springwood, Manchester. (Entered in wrong Class.) First prize withheld.

Class 31.—GOLDEN-PENCILLED HAMBURGS.—Cockerel and three Pullets.—444. First prize, Joseph Whittington, junr., Wootton Waven, near Henley-in-Arden, Warwickshire. 440. Second prize, Daniel Harrison, Singleton Park, near Kendal. Highly Commended.—432. Roger Hartley Gawthorpe, St. James'-street, Burnley.

Class 32.—GOLDEN-SPANGLED HAMBURGS.—Cock and two Hens.—452. First prize, William Bourne (cottager), Gorton Terrace, Hyde Road, West Gorton. 449. Second prize, George Fell, Springfield, Warrington. Highly Commended.—448. George Fell, Springfield, Warrington. Disqualified.—451. Alfred Barton, Springwood, Manchester. (Entered in wrong Class.)

Class 33.—GOLDEN-SPANGLED HAMBURGS.—Cockerel and three Pullets.—465. First prize, M. H. Broadhead, Stubbin, Holmfirth. 462. Second prize, Charles Storr Kennedy, J.P., Fair View, Ulverston. Highly Commended.—469. William Kershaw, Peel-street, Heywood. 470. S. Adolphus Meyer, Grosvenor Mount, Crumpsall. Commended.—464. John Andrew (cottager), Water-houses, near Ashton-under-Lyne. 473. Thomas West, Eccleston Place, near St. Helens. 477. James Heywood, Bow Lee, Middleton, near Manchester.

Class 34.—SILVER-PENCILLED HAMBURGS.—Cock and two Hens.—481. First prize, Edward Archer, Malvern. 487. Second prize, William Cannan, Eccleshill, near Bradford.

Class 35.—SILVER-PENCILLED HAMBURGS.—Cockerel and three Pullets.—494. First prize, Thomas Haslam (cottager), Synister Lane, near Middleton. 502. Second prize, Thomas Whittington, junr., Wootton Waven, near Henley-in-Arden, Warwickshire. Commended.—493. James F. Greenall, Grappenhall Hall, Warrington.

Class 36.—SILVER-SPANGLED HAMBURGS.—Cock and two Hens.—506. First prize, George Fell, Springfield, Warrington. 512. Second prize, S. Adolphus Meyer, Grosvenor Mount, Crumpsall.

Class 37.—SILVER-SPANGLED HAMBURGS.—Cockerel and three Pullets.—524. First prize, Thomas Scholes (cottager), Denton Lane, Chadderton, near Fox Denton. 517. Second prize, Robert Barrett (cottager), Millwright, Sutton Crosshills, Keighley, Yorkshire. Highly Commended.—534. S. Adolphus Meyer, Grosvenor Mount, Crumpsall. 535. William Mitchell, Cabbage House, Keighley.

Class 38.—POLAND FOWL (Black with White Crests).—Cock and two Hens.—544. First prize, Alfred Rushworth, 10, Buxton Road, Huddersfield. 533. Second prize, John Amphlett, Saddler's Ironmonger, Walsall.

Class 39.—POLAND FOWL (Black with White Crests).—Cockerel and

three Pullets.—547. First prize, Joseph Bamforth, Holmfirth. 546. Second prize, Mrs. Horsfall, Duffield Bank House, near Derby.

Class 40.—POLAND FOWL (Golden).—Cock and two Hens.—551. First prize, James F. Greenall, Grappenhall Hall, Warrington. 550. Second prize, Cyrus Clark, Street, near Glastonbury, Somerset. Commended.—554. Joseph Conyers, 42, Boar Lane, Leeds.

Class 41.—POLAND FOWL (Golden).—Cockerel and three Pullets.—559. First prize, W. G. Vivian, Singleton, Swansea. 562. Second prize, Colonel Clowes, Froxmer Court, Worcester. Commended.—561. Charles Edward Coleridge, Eton College, Windsor. 567. Edward Stansfield, Dewsbury.

Class 42.—POLAND FOWL (Silver).—Cock and two Hens.—576. First prize, Cyrus Clark, Street, near Glastonbury, Somerset. 574. Second prize, S. T. Baker, Manor House, King's Road, Chelsea, London. Disqualified.—577. James F. Greenall, Grappenhall Hall, Warrington. (Cock ill.)

Class 43.—POLAND FOWL (Silver).—Cockerel and three Pullets.—584. First prize, Colonel Clowes, Froxmer Court, Worcester. 580. Second prize, W. G. Vivian, Singleton, Swansea. Highly Commended.—591. Samuel Taylor Smith, Park Lane, Madeley, Shropshire. Commended.—583. Charles Edward Coleridge, Eton College, Windsor. 585. William Cox, Brailsford Hall, Derby.

Class 44.—BANTAMS (Gold-laced).—Cock and two Hens, or Cockerel and Pullets.—593. First prize, James F. Greenall, Grappenhall Hall, Warrington. 594. Second prize, Matthew Leno, junr., Hemel-Hempstead, Herts. Disqualified.—597. James Taylor, Green Lane, Hough End, Withington. (A Hen too many.) 600. William Mitchell, Cabbage House, Keighley. (A Hen too many.) 601. John W. P. Salmon, Strawberry Hill, Pendleton. (Mixed.)

Class 45.—BANTAMS (Silver-laced).—Cock and two Hens, or Cockerel and Pullets.—604. First prize, Matthew Leno, junr., Hemel-Hempstead, Herts. Disqualified.—603. Mrs. Lockyer, Heather, near Ashby-de-la-Zouch. (A Hen too many.) Second prize withheld.

Class 46.—BANTAMS (Black).—Cock and two Hens, or Cockerel and Pullets.—616. First prize, James Dixon, North Park, Horton, near Bradford. 612. Second prize, John R. Rodhard, Aldwick Court, Langford, near Bristol. Highly Commended.—607. Alexander Cosgrove, Fairfield. 609. Edwin Heyworth, Eaves Lane, Chorley. Commended.—615. Joseph Conyers, 42, Boar Lane, Leeds. (An excellent class.)

Class 47.—BANTAMS (White).—Cock and two Hens, or Cockerel and Pullets.—622. First prize, James Dixon, North Park, Horton, near Bradford. 617. Second prize, Samuel Armitage, Thornton Road, Bradford, Yorkshire.

Class 48.—BANTAMS (Any other variety).—Cock and two Hens, or Cockerel and Pullets.—625. First prize, John Edward Brown, Ordsall. Second prize withheld.

Class 49.—SINGLE HEN.—More than one year old.—Spanish.—631. First prize, G. A. Gelderd, Aikrigg End, Kendal. 640. Second prize, Edward Ecrody, Lomeshaye, near Burnley. Very Highly Commended.—635. John Roberts (cottager), Newton, at Sarah Roberts', Golden Lion Inn, Oldham Road. Commended.—637. John S. Henry, Woodlands, Crumpsall, near Manchester. 639. Peter Dornig, Kersley, near Manchester. Disqualified.—630. Peter Eden, Cross Lane, Salford. (Face tampered with.)

SINGLE HEN (Cochin).—648. First prize, Samuel Harrop, Middleton, near Manchester. 658. Second prize, James Walker, 34, Moorgate, Bury, Lancashire. Highly Commended.—642. Thomas Stretch, Marsh Lane, Bootle, Liverpool. Commended.—645. Rev. Charles H. Crosse, New Square, Cambridge. 652. Captain William Henry Snell, St. Swithin's Lane, London.

SINGLE HEN (Dorking).—659. First prize, R. Edward Ashton, Ramsbottom. 664. Second prize, Mrs. Michael Potter, Prestwich, near Manchester. Commended.—661. Michael Potter, Prestwich, near Manchester.

SINGLE HEN (Game).—674. First prize, James Dixon, North Park, Horton, near Bradford. 672. Second prize, W. M. Marriott (cottager), Boothroyd, Dewsbury.

SINGLE HEN (Hamburgh).—679. First prize, Alfred Peters, Wolverhampton. 677. Second prize, John Holmes, Gravelly Hill, near Birmingham. Highly Commended.—676. James F. Greenall, Grappenhall Hall, Warrington.

Class 50.—SINGLE COCK.—More than one year old.—Spanish.—686. First prize, Henry Openshaw, Wilton Polygon, Cheetham Hill. 684. Second prize, William Moscrop, Silver-street, Bury. Commended.—682. Wm. Whitwell, junr., Tolson Hall, Kendal.

SINGLE COCK (Cochin).—711. First prize, James Walker, 34, Moorgate, Bury, Lancashire. 700. Second prize, G. A. Gelderd, Aikrigg End, Kendal. Highly Commended.—695. Thomas Stretch, Marsh Lane, Bootle, Liverpool. 698. Thomas Hincks, Penn Fields, Wolverhampton. Commended.—707. William Wanklyn, junr., Greenbank, Bury, Lancashire.

SINGLE COCK (Dorking).—732. First prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley. 720. Second prize, Daniel Harrison, Singleton Park, Kendal. Very Highly Commended.—731. Joseph Whitworth, The Firs, Fallowfield, Manchester. Commended.—723. Alfred Barton, Springwood, Manchester.

SINGLE COCK (Game).—733. First prize, James Fletcher, Ringley, near Bolton. 739. Second prize, William Lomax, Radcliffe, near Manchester. Highly Commended.—735. George Ashton, Linfield, Bury, Lancashire.

SINGLE COCK (Hamburgh).—751. First prize, M. H. Broadhead, Stubbin, Holmfirth. 746. Second prize, William Kershaw, Peel-street, Heywood.

Class 51.—**GESE.**—Gander and two Geese.—766. First prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley. 761. Second prize, William Charlton, Seedly, Pendleton. Highly Commended.—763. Colonel Clowes, Broughton Old Hall, Manchester. 760. Rev. John F. Newton, Kirkby-in-cleveland, Northallerton. Commended.—761. Roger Millkirk, Aitrincham, Cheshire. 765. Threlfall Rigby, Runcorn.

Class 52.—**DUCKS** (White Aylesbury).—Drake and two Ducks.—774. First prize, William Charlton, Seedly, Pendleton. 784. Second prize, William North (cottager), Leeds Road, Huddersfield. Highly Commended.—768. Thomas Burnett, Hutton, Preston. 779. John Weston, Aylesbury, Bucks. Commended.—770. Joseph Jennens, Moseley, near Birmingham. 771. Joseph Jennens, Moseley, near Birmingham.

Class 53.—**DUCKS** (Rouen).—Drake and two Ducks. 790. First prize, Theed William Pearce, Bromham Road, Bedford, Beds. 788. Second prize, Mrs. David Henderson, Top'o'th Lee, Shuttleworth, Bury. Commended.—789. Mrs. David Henderson, Top'o'th Lee, Shuttleworth, Bury. 792. Henry Worrall, Knotty Ash House, near Liverpool.

Class 54.—**DUCKS** (Any other variety).—Drake and two Ducks.—800. First prize, James Dixon, North Park, Horton, near Bradford. 802. Second prize, Miss Stanton, Greenfield, near Warrington.

Class 55.—**TURKEYS.**—Cock and two Hens.—811. First prize, Joseph Conyers, 42, Bear Lane, Leeds. 810. Second prize, Edward W. Wilnot, Hulme, Walfield, Congleton. Commended.—804. Vernon Darbshire, Pendyffryn, Conway, North Wales. 806. Colonel Clowes, Broughton Old Hall, Manchester.

EXTRA STOCK.—813. Prize, W. G. Vivian, Singleton, Swansea. (White Poland.) 815. Prize, Colonel Clowes, Froxmer Court, Worcester. (Andalusian). 820. Prize, John S. Henry, Woodlands, Crumpsall. (Shanghae and Bantams.) 826. Prize, James Walker, 34, Moorgate, Bury, Lancashire. (Cochins.)

KENDAL EXHIBITION OF POULTRY.

(Communicated).

THE third Kendal annual exhibition of poultry, open to the United Kingdom, took place on the 21st, 22nd, and 23rd of December. The show was held in the large new room of the Castle Mills, a portion of which had been partitioned off for the purpose. The spacious and airy room was well calculated to set off the beauty of the birds; and all the discomforts of crowding, whether of birds or unfeathered bipeds, were thus obviated. The Kendal Poultry Exhibition has each year made an improvement in regard to the place of exhibition over the previous year. The list of entries (405 Pairs) exhibited a considerable increase in numbers over that of last year. The *Cochins* exhibited a diminution indicative of their declining from the absurd eminence to which unprincipled dealers and monied amateurs had raised them in the poultry world; nor, with the exception of that for the single cocks, were the classes of *Cochins* at all eminent in quality. The *Dorkings* were rather more numerous than last year. The whole of classes 3 and 4 of these birds were highly commended by the judge, and the single cocks were an excellent class. The entries of *Black Spanish* were also larger than last year, and formed an important feature in the show. Classes 1 and 2 of these birds were very good. The most numerous entry was that of *Game fowls*, being sixteen over that of last year. The *Dorkings*, the *Game*, and the *Black Spanish* formed the great strength of the show. There was a large increase in the entries of *Hamburgs* over last year. The *Polands* were also more numerous than last year, and were very good. *Bantams* were about the same. *Ducks* were less in number than last year, and *Turkeys* very few comparatively; but there was a considerable increase in *Pigeons*, and they were a very pretty show. Taking it altogether, there was but one opinion, that the show was a very beautiful one, and the secretary and committee have every reason to congratulate themselves on the result of their exertions. The judge was Mr. T. B. Stead, of Leeds, a gentleman of whose ability and impartiality there could be no dispute. The entries exhibited a wide range of competition, there being many from Bradford, Leeds, Burnley, Bury, Birmingham, Carlisle, &c., a proof that the Kendal Poultry Exhibition has established its importance.

RESULTS FROM DRYING POTATO SETS AT A HIGH TEMPERATURE.

HAVING, last year, observed in one of the public prints, respecting the drying of seed Potatoes, by artificial heat, the produce of which proved free from disease, I, last season,

made an attempt to ascertain whether or not there was any benefit to be derived from the process.

I made the trial (rather an imperfect one, I fear) on three lots of seed.

1st Lot, about half a stone of Early Whites.

2nd Lot, 1 stone of Kemps.

3rd Lot, 4 stone of White Roughs.

The first lot was planted with a small quantity of manure; were long in coming up; produce good; very few diseased.

The second lot was planted on some ground where some workmen had deposited a quantity of lime rubbish; a little guano was used with these. A few missed, as was the case with some others on the same plot: the crop was good, and the diseased ones were much fewer than in the first lot.

The third lot was planted along with a quantity of a similar kind not subjected to the drying process, all treated with a fair portion of fresh stable manure.

In digging these the disease was very prevalent amongst the produce of the undried seed; amongst those produced from the dried seed, the diseased ones were not half so many; the difference was discernible immediately on comparing two adjoining rows.

I have already stated that I consider my trial as an imperfect one. I was too much engaged in more pressing business to be able to attend to it as I should have wished. My drying place was an iron oven beside the kitchen fire-place, which being rendered pretty warm by day, I used during the night, for two successive nights. Not having time or space to dry them by single layers, I heaped them one upon another: and thus, I fear, all were not equally dried. Besides this I had delayed my experiment till the seed had made long shoots, which I broke off, and thus retarded, if I did not weaken, the crop. Notwithstanding the unfavourable circumstances under which the above trials have been made, I feel, in the first place, that judicious artificial drying does not injure the vegetative power; and in the next place, I cannot but think that it has some influence towards diminishing the violence of the disease; if it cannot altogether prevent it.—C.

A NEW KIND OF DOMESTIC FOWL.

THE following note refers to the fowl depicted at p. 264: "A certain approximation to this singular development of comb is frequently witnessed in coarse specimens of the Spangled Polish; and even more perfectly in certain fowls that have been recently exhibited as the "*Horned Atlantic*." It may, however, be questioned, from this statement, made by Mr. Wright, whether the female bird is altogether of the same blood as her companion; but we hope to gain further information of these specimens of Bessarabian poultry, which in due time shall be laid before our readers.—W.

QUERIES AND ANSWERS.

GARDENING.

SHRUBS FOR VERY COLD SITUATIONS.

"I shall feel obliged if you will name a few hardy quick-growing evergreen and deciduous trees and shrubs to plant about a mansion in a very high situation in Northumberland. The soil is a retentive loam, on a clay subsoil, well-drained. Nothing will suit the situation but what is extremely hardy and will bear almost any degree of frost. The common Laurel is cut down to the ground here almost every winter.—J. S."

[Where the Laurel is cut down every winter, the only evergreens that we can recommend are Hollies, Yews, and Junipers, for low and slow growths. Then Firs and Spruces, to nurse them and others. Birch, Beech, and Bird Cherry, will grow in the coldest parts in the kingdom; and Larch faster than any of them. The best way, and, indeed, the only way, under your circumstances, is first to get up belts, or plantations of Larch, Scotch Fir, and Spruce Fir, with a few Birches, to nurse better plants and evergreens after a few years, and then to begin thinning-out some of the nurse-plants as the more favourable plants increase in growth.]

HEATING BY WASTE STEAM FROM BREWERY— NEW THERMOMETER.

"At the east end of my house is a stable; it stands eleven feet back from the front of the house, and forms a recess with the house and garden wall, twenty-seven feet long, by eleven feet wide; in that recess I propose erecting a greenhouse. The reason why I trouble you is to ask your opinion as to the mode I intend heating it. To the east of the stable there is a brewery; the steam-pipe used for heating the brewery makes its exit at the back of the brewery, about forty feet from where I intend building my greenhouse. The ground where the brewery stands is a good deal lower than the front of the house; and the place where the waste steam escapes is about three feet lower than the ground level of the proposed greenhouse. Would it answer to continue the steam-pipe in a conduit underground, to the greenhouse, and bring it out under the stage, and coil three or four times backward and forward, then take it out against the back wall? The steam-pipe that comes out of the brewery is one-and-a-quarter inch lead-pipe; would pipe of the same size be sufficient to continue it to and through the greenhouse? Should the pipe in the conduit be supported on pieces of wood, as wood is a worse conductor of heat than bricks or stone? I shall feel obliged if you will give me your opinion of the above, with any improvement you can suggest.

"I see in 'Chambers' Journal,' for October 21st, that 'The Kew Committee appointed by the British Association have done good service, for they have at last made a *Thermometer*, which is a standard, and not a toy, and which can be sold for 4s. 6d.' Pray can you inform me where they can be bought? as most of the thermometers are little better than toys. I never had two but they varied considerably in certain parts of the scale.—A. D."

[We see nothing to prevent your proposed mode of heating your greenhouse answering admirably. The house itself will be a great improvement in the position. We would have a large tap where the steam now escapes, so that it could be let off there, when not wanted for the house. There is one thing that rather confuses us. You speak of the steam-pipe that heats your brewery, and the place where the *waste steam* escapes. Now, we can easily see how the first named pipe would heat your greenhouse, if always to be had when required; but could have no faith in the influence of the latter, at the distance of forty feet. Presuming the former is meant, after adding the tap, continue the leaden pipe until you get to the house, leaving a small hollow space all the way, with an opening at each end, and thus you will always be getting fresh heated air into the house when the tap is turned on. When the pipe reaches the house, you might connect it with iron pipes three times the size, or even of the same size as the leaden pipes, and surround them with a mass of stones, clinkers, &c., which will both regulate and moderate the heat: the steam, in either case, escaping as you propose. Such a mode of heating, with the heating almost always at command during winter, would enable you to give more air, and thus keep your plants more healthy than they would be in a closer house, and with more difficulty and expense as to a heating medium. We believe much may be done with the waste heat that flies off from many of our manufactories. Without reflecting on others, it would be a greater pleasure to answer questions if all were luminously stated as in the present instance. We should hope that the Thermometers you allude to will be advertised, for with such properties, and at such a price, the sale would not be limited.]

HEATING A CUCUMBER-PIT.

"Seeing you did not clearly understand the meaning of what I called a double house, I have sent you a ground-plan of it, with the potting-shed, and a pit, as you will see by the plan, heated by the same boiler as the house. The fire has been constantly kept up for a fortnight, to get the heat up in the pit; but the thermometer does not rise 54.5° by day, and about 50° by night. The pipes in the pit are two-inch bore, dropping a little all round the pit. On the pipes I put about fifteen or eighteen inches of brick-bats, &c., then one layer of old turf, to prevent the earth from running down among the drainage. Should the pipes be so

much as five-feet-and-a-half from the glass at the back of the pit? as it will have to heat through three-and-a-half feet of materials of all sorts. I want to put some Cucumbers-plants in the pit forthwith; must I wait for the heat to get up, or must it be altered in any way?—A YOUNG BEGINNER."

[If we understand you aright *now*, it is not the pits of the houses beneath which you seem to have no pipes; but the small pit in front of the potting-shed that you are trying to heat for Cucumbers. We dislike two-inch-bore-pipes, as the water does not circulate freely; and so far as we can make it out, the pipes are quite near enough the sides. You would require four, at least, of such pipes, if not six, to heat such a place properly for Cucumbers in winter. See what has been said to another person, to-day, about seeing that the return pipe to the boiler was higher than the top of the boiler. Then it matters not how far the pipes were from the surface, provided the space between the pipes and the soil was filled with good conducting material, such as brick-bats, stones, &c.; it would only be longer in getting heated; but then it would retain heat longer. It is of no use planting Cucumbers, unless, even in cold weather, you can command a heat approaching 70°. We would enlarge more; but there have been several cases quite analogous that received full replies. If this is not sufficient, send us an end section of the boilers and pit. Be kind enough always to refer to the page and number. You say, "in your last number," and we have been obliged to refer back and back to p. 149; and thus we lose time.]

POULTRY.

CHARACTERISTICS OF HAMBURGHS.

"I am induced to address to you the following remarks, from reading the 'points of excellence in the various breeds of Hamburgs,' contained in your number of December 5th, at p. 173. My first remark is on the assertion that the more accurate spangling often seen in the hen-tailed cock does not compensate for the defect in his plumage. I possess both, and am decidedly of a contrary opinion; but without taking my pen to defend the 'Hennies' at length, as might very easily be done, I will wait the final decision of the fancy, when the 'Hennies' are sure to carry off the palm.

"Your correspondent commits himself very much more of want of knowledge in describing the Silver-spangled variety. It is absolutely necessary, that 'instead of black preponderating in the tail, the tail must be white, in both cock and hen, with only strong tips of black at the end of every feather; any running at all of black amongst the feathers is an eyesore, and depreciates the value of the bird. I admit the difficulty of getting first class birds of this (in fact, of any other) variety. I make these statements with more confidence, seeing this (Yorkshire) is the home of the Gold and Silver-Spangled, and Silver-Pencilled Hamburgs being kept in great numbers in this district. The Grey-backed and Grey-tailed birds are at once consigned to the pot. The Hen-tailed birds of this variety are very scarce; but a friend of mine has got two or three of great merit.—FAIRPLAY."

["Fairplay" objects to our estimate of "Hamburg characteristics," on two points. Of these, the first refers to the hen-tailed cocks, so emphatically condemned at the last Birmingham meeting, where they obtained neither prize, nor commendation. "Fairplay" prefers them; we do not; but our reasons for this have been so frequently before our readers, and the general impression against the Hennies is so strong, that we need say no more. But we are also charged with a want of knowledge in describing the tail of the Silver-spangled cock. It is, however, uncertain, from his communication, whether "Fairplay's" comments apply to the sickle as well as to the hen-tailed birds. If the latter only be alluded to, the black-tipped white tail would, no doubt, be essential; but with these we are not concerned, and have said nothing respecting them. Presuming, however, that his remarks are intended to include the sickle-tailed birds, a few words must be said in explanation of our statement.

We are perfectly ready to assent to the opinion, that the

sickle and other tail feathers of the Silver-spangled Hamburgh cock would appear to most advantage if merely tipped with black on a white ground; but the specimens usually seen thus marked have commonly been defective in other material points, hence, the prizes have fallen to dark-tailed opponents. "*Hamburgh characteristics*," we would observe, were written before the last Birmingham exhibition, where the spangled-tailed birds certainly came out more strongly than on previous occasions. But although a perfectly spangled tail would fairly take precedence of one in which both black and white are present, the former preponderating, we should still regard the latter in a more favourable light than one with irregularly spangled, or with a larger proportion of white. We find the following note attached to our memorandum at the last exhibition in Bingley Hall. "The tails of several of the Silver-spangled Hamburgs were perfectly spangled on the sickle as well as on the other feathers." In conclusion, we would assure "Fairplay" that his signature is the sole principle on which all our poultry criticisms are ever founded.—W.]

HOW LONDON IS SUPPLIED WITH MEAT, POULTRY, VEGETABLES, AND MILK.

LONDON has always been celebrated for the excellence of its meat, and her sons do justice to it; at least, it has become the universal impression that they consume more, man for man, than any other town population in the world. It was a sirlain, fresh and ruddy, hanging before the door of Gibblet or Slater in a former century, that inspired, we suspect, the song which ever since has stirred Englishmen in a foreign land, "The Roast Beef of Old England." The visitor accustomed to the markets of our large provincial towns, would doubtless expect to find the emporium of the live-stock trade for so vast a population of an imposing size. The foreigner, after seeing the magnificence of our docks, the solidity and span of our bridges, might naturally look for a national exposition of our greatness, in the chief market which is dedicated to that British beef which is the boast of John Bull. What they do see in reality, if they have courage to wend their way along any of the narrow tumble-down streets approaching to Smithfield, which the great fire unfortunately spared, is an irregular space bounded by dirty houses and the ragged party-walls of demolished habitations, which give it the appearance of the site of a recent conflagration—the whole space comprising just six acres, fifteen perches, roads and public thoroughfares included. Into this narrow area, surrounded with slaughter houses, triperies, bone-boiling houses, gut-scraperies, &c., the mutton-chops, scrags, saddles, legs, sirlains, and rounds, which grace the smiling boards of our noble imperial capital throughout the year, have, for the major part, been goaded and confused for the benefit of the civic corporation installed at Guildhall. Thanks to the common sense which has at length lifted up its potential voice, the days of Smithfield are numbered, and those who wish to see this enormous aggregation of edible quadrupeds, before it takes its departure to its spacious new abode at Copenhagen fields must not delay the visit much longer. The best time is early in the morning, say one or two o'clock of the "great day," as the last market before Christmas-day is called. On this occasion, not only the space—calculated to hold 400 oxen and 30,000 sheep, besides calves and pigs—is crammed, but the approaches around it overflow with live-stock for many hundred feet, and sometimes the cattle are seen blocking up the passage as far as St. Sepulchre's church. If the stranger can make his way through the crowd, and by means of some vantage-ground or door-step can manage to raise himself a few feet above the general level, he sees before him in one direction, by the dim red light of hundreds of torches, a writhing party-coloured mass, surmounted by twisting horns, some in rows, tied to rails which run along the whole length of the open space, some gathered together in one struggling knot. In another quarter, the moving torches reveal to him, now and then, through the misty light, a couple of acres of living wool, or roods of pigs' skins. If he ventures into this closely wedged and labouring mass, he is enabled to watch more narrowly the reason of this universal ferment among

the beasts. The drover with his goad is forcing the cattle into the smallest possible compass, and a little further on half-a-dozen men are making desperate efforts to drag refractory oxen up to the rails with ropes. In the scuffle which ensues, the slipping of the ropes often snaps the fingers of the persons who are conducting the operation, and there is scarce a drover in the market who has not had some of his digits broken. The sheep, squeezed into hurdles like figs in a drum, lie down upon each other, "and make no sign;" the pigs, on the other hand, cry out before they are hurt. This scene, which has more the appearance of a hideous nightmare than a weekly exhibition in a civilised country, is accompanied by the barking of dogs, the bellowing of cattle, the cursing of men, and dull blows of sticks—a charivari of sound that must be heard to be appreciated. The hubbub gradually abates from 12 o'clock at night, the time of opening, to its close at 3 p.m. next day; although, during the whole period, as fresh lots are "headed up," individual acts of cruelty continue. Can it excite surprise that a state of things, the worst details of which we have suppressed, because of the pain which such horrors excite, sometimes so injures the stock, that, to quote the words of one of the witnesses before the Smithfield Commission, "a grazier will not know his own beast four days after it has left him?" The meat itself suffers in quality; for anything like fright or passion is well known to affect the blood, and, consequently, the flesh. Beasts subjected to such disturbances will often turn green within twenty-four hours after death. Mr. Slater, the well-known butcher of Kensington and Jermyn Street, states that mutton is often so disfigured by blows and the goad that it cannot be sold for the West-end tables. Many of the drovers, we doubt not, are ruffians, but we believe the greater part of this cruelty is to be ascribed to the market-place itself, which, considering the immense amount of business to be got through on Mondays and Fridays, is absurdly and disgracefully confined. According to the official account, the number of live stock exhibited in 1853 was—

Oxen.	Sheep.	Calves.	Pigs.	Total.
294,571	1,518,040	36,791	29,593	1,893,888

But this is far from giving a true idea of the whole amount brought into London. Much stock arrives in the capital which never enters the great mart. For example, Mr. Slater, who kills per week, on the average, 200 sheep, and from 20 to 25 oxen, says, in his evidence before the Smithfield Commission, that he buys a great deal of his stock from the graziers in Norfolk and Essex. Again, 'town' pigs are slaughtered and sent direct to the meat market, while many sheep are bought from the parks where they have been temporally placed till they find a purchaser. A much more correct estimate of the flocks and herds which are annually consumed in London may be gathered from a report of the numbers transmitted by the different lines of railway, compiled from official sources by Mr. Ormandy, the cattle-traffic manager of the North-Western Railway. From this able pamphlet we extract the following table:—

	Oxen.	Sheep.	Calves.	Pigs.	Total for 1853.
By Eastern Counties . .	81,744	277,735	3,492	23,427	386,398
" L. & N. Western . .	79,435	248,445	5,113	24,287	348,280
" Great Northern . .	15,439	120,333	563	8,973	145,308
" Great Western . .	6,813	104,607	2,320	2,909	116,649
" L. & S. Western . .	4,885	100,960	1,781	516	108,142
" South Eastern . .	875	58,320	114	142	59,451
" L. & B. & S. Coast .	863	13,690	117	54	14,764
" Sea from North of England & Scotland .	14,662	11,141	421	3,672	29,896
" Sea from Ireland . .	2,311	3,482	21	5,476	11,280
Imported from the Continent	55,065	229,918	25,720	10,131	320,834
Driven in by road, and from the neighbourhood of the metropolis (obtained from the toll-gate lessees).	69,096	462,172	62,114	48,265	641,647
Total	322,188	1,630,093	110,776	127,852	2,182,609

These numbers show at a glance what a part the railway plays in supplying animal food to the metropolis, and how trifling in comparison is the amount that travels up on foot. The Eastern Counties lines, penetrating and monopolising

the rich breeding and fattening districts of Norfolk and Essex, bring up the largest share. Many of the little black cattle, that tourists see in Scotland climbing the hills like cats, come directly from these counties, having, some months before, been sent thither, from their native north, to clothe their bones with English substance. By the same line we receive a fair portion of that great foreign contribution to our larders, the mere shadow of which so frightened our graziers some years ago, principally Danish stock, which finds its way from Tønning to Lowestoff, a route newly opened up by the North of Europe Steam-ship Company. The North-Western is next in rank as a carrier of live stock. This line takes in the contributions from the midland counties, and, by way of Liverpool, abundance of Irish and Scotch cattle. The Great Northern is perhaps destined to surpass both in the quantities of food it will eventually pour into London, running as it does through the northern breeding districts, and receiving at its extremity the herds which come from Aberdeen and its neighbourhood. — (*Quarterly Review.*)

(To be continued.)

A FEW WORDS MORE ABOUT BRAHMA POOTRAS.

SOME short time ago you did me the honour to transcribe an article on these birds, from the second edition of my work on "Profitable Poultry;" since that article was written, I have reared several broods, from various strains, and now offer my extended experience respecting them. The views there laid down, namely, that Brahmas are either Grey Cochins, or cross-bred birds, I have not seen the slightest reason to modify in the least, but, on the contrary, every circumstance leads to convince me of the correctness of those views.

Into several additional anatomical reasons for regarding them as one race, I will not enter here, as they would be more interesting to comparative anatomists than to general readers. The true Grey Cochins I have found bred true to comb and colour; but the cross-bred birds are subject to throw all varieties of colour in the chicken. I could instance one well-known and most successful breeder, who reared a number of fine buffs from imported greys; and I also know, positively, that in a pen that has been taking prizes at several shows, is a hen that was bred from one of Mr. Stainton's repudiated *top-knotted* grey Cochins (that were in this country before the name of Brahma was ever heard,) and a buff hen; and the best part of the joke is, that the prizes were awarded by an "eminent" judge, who is a strong advocate for the view that Brahmas are a perfectly distinct breed.

Into the cause of the discrepant and vacillating judgments (of the same judges) respecting them, I will not enter here; but the fact, that, in the beginning of the season, nothing was looked at but light birds with dark hackle and tail, and at the end none stood any chance of a prize, except the very dark greys, has given great annoyance to many breeders, who, in the early part of the year, got rid of all their dark chicken, as worthless, at a nominal price; and at the end, find the judges turn round and award prizes to these very repudiated birds.

Let it not be imagined that I am prejudiced against Brahmas; I have kept them for two seasons, and still mean to keep them. I find them docile, hardy in the extreme, being quite equal to the buffs in this respect, good layers and good nurses. As a proof of their hardihood, I may mention, that one clutch, for which I am indebted to Dr. Gwynne, were hatched and reared in a barrel placed in an open shrubbery, and were never in a house until December, yet not the slightest ailment ever affected one of these birds.

As another proof, I may state, that I sent two of the cockerels out to a run, in charge of a man who was suddenly called into the country; on going to look after my birds, a fortnight after his departure, I found the yard, fowl-house, &c., in the most filthy state, and the birds starving from neglect; all his birds were ill, some rumpy, some dead; but the two greys were in the most robust health, although, as may be imagined, not over fat.

Another favourable point, is the enormous weight they attain. One of the hens in Mr. Allison's first-prize pen, at Birmingham, weighed upwards of eleven pounds-and-a-half, and this without being fed on soft food, or in any way fattened up for the show. In fact, the good parts of these birds are the same as those of the ordinary Buff Cochins, and their demerits are likewise similar: one being, that they will never rate as a first-class table-fowl for the market; and another, that their buff eggs are not esteemed by the Londoners as equal to white; and, consequently, they do not realise the same price as the new-laid eggs of other varieties. This may be regarded, and doubtless is, an undue prejudice on the part of inhabitants of the monster city, but it is not the less a fact.—W. B. TEGETMEIER.

TO CORRESPONDENTS.

WARDIAN CASE (W. L. T.).—We never recommend tradesmen. Mr. Appleby, Victoria Nursery, Uxbridge, can give you the information you require.

COCHINS NOT LAYING (*Idem*).—Your birds are, probably, two or three years old, and if so, they are not such good winter egg-producers as pullets. Yours is a very confined place, and in such no fowls lay so abundantly as they do when they have a wider range.

CLIMBER IN BALCONY (*A. Close*).—We cannot recognise this plant of which the only description is, that it has "golden fruit shaped like the Egg Plum."

DORKINGS NOT LAYING (*T. F. W.*).—Your hens of this breed will not lay so freely as when they were pullets.

LEVELLING TURF (*B.*).—Nothing will render your turf finer or more level than constant mowing and rolling, to which we should add a dressing of fine coal ashes, and a little common salt. Of the latter at the rate of five bushels per acre, applied in April. We hope soon to give a series of papers upon *measuring land*. We would readily publish a *general Index* if we could get a thousand subscribers at sixpence each.

IMPERISHABLE SIZE.—*R. N. T.* will be obliged by a receipt for making this. It is used for various purposes by painters.

FRILL-BACKED PIGEONS (*T. G.*).—The exhibitor of these at Birmingham was Mr. Henry Wardle, of Burton-upon-Trent.

HEATING BY HOT-WATER PIPES (*A Correspondent*). We certainly do not understand you, and have some small doubts whether you really meant us so to do; as instead of useless apologies, you would have written with something more legible than a soft pencil. So far as we can understand, your error consists in this, that the chamber, in which you expect to obtain bottom-heat, is warmed by *pipes, lower* than the position of your boiler, and, consequently, prevented having direct circulation with it. Your cistern of supply is all right enough. It matters not the distance between the flow and return-pipe that heats the atmosphere of the house, and the flow and return-pipe that gives you bottom-heat, provided, in such a case, both flows proceed from a reservoir higher than either, and both returns join, or go separately to the boiler; the lowest point of the lowest return-pipe being almost as high, if a little higher the better, than the top of the boiler. Even when this is done, there is sometimes a little difficulty in getting top and bottom-heat equally strong but a little care of the plugs will soon make that all right.

VARIOUS.—For summer-blooming greenhouse plants, that will do for exhibition if required. *Azalea*, *Danielsiana*, *variegata*, &c. *Aphelexis*, *humilis*, *spectabilis*, *macrantha rosca*, *macrantha purpurea*. *Boronia*, *serrulata*, *pinnata*, *microphylla*. *Crocea*, *saligna*. *Erica*, *Bergiana*, *Cavendishii*, *tricolor*, *ventricosa*. *Epacris*, *miniata*, *grandiflora*. *Kalosanthes*, *coccinea*, *miniata*, *versicolor*. *Leschenaultia*, *Baxterii*, *biloba*, *formosa*. *Phenocoma*, *prolifera*. *Pimelea*, *linifolia*, *Hendersonii*. *Polygala*, *oppositifolia*. *Statice*, *Holfordii*, and others. *Tetrateuca*, *verticillata*, *ericifolia*. Other parts of your letter will meet attention. You will find an instalment in Mr. Fish's article of to-day.

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WORKS BY MR. TEGETMEIER:—

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WEEKLY CALENDAR.

D M	D W	JANUARY 16—22, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
16	Tu	Demetrias astricapilla.	29.863—29.815	46—41	S.E.	0.8	1 a 8	19 a 4	6 41	26	9 58	16
17	W	Hyphydrus ovatus.	30.076—29.928	48—45	S.W.	10	0	20	7 51	29	10 19	17
18	Th	Noterus sparsus.	30.151—30.134	48—35	S.W.	—	59 a 7	22	sets.	30	10 38	18
19	F	Colymbetes hipunctatus.	30.065—29.944	45—29	S.E.	0.1	58	24	5 a 46	1	10 57	19
20	S	Sun's declinat., 20° 11' s.	30.005—29.927	51—35	S.W.	0.1	57	25	7 19	2	11 16	20
21	SUN	3 SUNDAY AFTER EPIPHANY.	30.267—30.175	50—28	S.	—	56	27	8 43	3	11 33	21
22	M	Acilius sulcatus.	30.107—29.978	49—24	S.W.	—	55	29	10 12	4	11 50	22

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 42.5°, and 31.7°, respectively. The greatest heat, 60°, occurred on the 19th, in 1828; and the lowest cold, four-and-a-half degrees below zero, on the 19th, in 1838. During the period 114 days were fine, and on 82 rain fell.

THE BOX TREE comes next, alphabetically, in our translation of the Holy Scriptures. The Hebrew word *Teashur* is so rendered, and whether the Box, or some other tree, was intended by that term, its derivation leaves no doubt that it referred to a flourishing evergreen tree.

There are one or two passages (*Ezekiel* xxvii. 6, and 2 *Esdras* xiv. 24) which are too doubtful to justify us in considering that they refer to this tree, or, indeed, to any tree; and there remains, therefore, only two verses in *Isaiah* where *Teashur* is so employed. These are the thirteenth verse of the sixtieth chapter, and the nineteenth verse of the forty-first chapter, and it is to the first we shall chiefly confine our attention.

It is as follows:—"The glory of Lebanon shall come unto thee, the Fir-tree, the Pine-tree, and the Box together, to beautify the place of my sanctuary; and I will make the place of my feet glorious." In such inspired poetry "the Evangelical Prophet" foretold the prosperity of the Church of Christ; but we should always bear in mind, that every simile in the prophetic writings has within it much more fulness of meaning than usually meets the eye at the first impression. There is almost invariably a two-fold meaning—a literal and a mystical—besides various minor appropriate references that are developed only as later science and later research reveal the properties and qualities and circumstances of the object used as a prophetic foreshadowing and illustration.

We are convinced, that when the Prophet speaks thus of the Cedar—"the glory of Lebanon,"—of the Fir, the Pine, and the Box, reference is made to the people who inhabit the climates where those trees abound, and who are all included among the multitudes of God's universal Church, and all contributing to render "the place of His feet glorious." At the same time, reference was intended to be made to those woods which should be employed, and, as it were, typically employed, in the re-construction of the Temple. As those woods were brought from various countries for the purposes of such construction, so would their people be brought together and united in one Church.

Nor was the foregoing the only mode of employing evergreens by the Israelites to "make the place of God's feet glorious;" for they were brought into the Temple during their festivals, especially that of Tabernacles. This was in accordance with the Levitical law, which commands, "Ye shall take you on the first day the

boughs of goodly trees, branches of Palm-trees, and the boughs of thick trees, and Willows of the brook; and ye shall rejoice before the Lord your God seven days." (*Levit.* xxiv. 40.) During the continuance of the festival the Israelites walked in procession round the altar with the branches in their hands, and the branches, like the songs they uttered, were termed "Hosannahs."

This practice of introducing evergreen boughs into places of public worship at certain festivals, we all know is retained in the Christian Church. Among those evergreens is included the Box. On Palm Sunday its sprigs are used as a substitute for Palms in Roman Catholic countries; and they were so in this country in the sixteenth century. The following extract from the churchwarden's accounts at St. Martin Outwich, in London, will serve as an example of many similar:—

"1510—11. Paid for Palme, Box-floures, and cakes
iiii d."

Garlands of it were also hung up in churches on the festival of St. Barnabas, June 11th. Thus, in the churchwarden's accounts for St. Mary-at-hill, in London, we find this entry:—

"1486. For two doss di *Boese* garlands for prestes
and clerkes on Saynt Barnabie daye,
i.e. x d."

Besides this local anniversary employment of the Box, it was a general custom, in the olden time, to take down, on Candlemas day, February 2nd, the Holly and other Christmas evergreen decorations, and to put up in their place sprigs of *Box*. So general was this custom, that Herrick makes it the burthen of one of his sonnets:—

"Down with the Rosemary and Bays,
Down with the Misseltoe;
Instead of Holly now upraise
The greener *Box* for show.

The Holly hitherto did sway,
Let *Box* now domineer,
Until the dancing Easter-day,
Or Easter-eve appear.

Then youthful *Box*, which now hath grace
Your houses to renew,
Grown old, surrender must his place
Unto the crisped Yew."

WE will next consider the characteristics of the SHANGHAE FOWL.

Buff.

Lemon.

Cinnamon.

Partridge.

Grouse.

White.

Black.

Grey.

Buff.—Plumage; Cock: hackle, back, saddle, and lesser wing-coverts, clear golden-chesnut; breast, under part of the body, and primaries, buff; tail, if not orange, at least a richly-bronzed black, short, and expanded more laterally than in other fowls.

Hen: as clear a buff as the cock's breast, the tail and portions of the primaries alone excepted; the less black, however, even here, the better. The primaries, as in the cock, should be marked, if at all, merely on the upper side of the web, so that when the wing is closed such stains do not appear. The perfectly-clear hackle is generally preferred; but light pencilling, on a limited portion of it adjoining the shoulder, is not objectionable. Fluff to be of good quality and abundant; in the hen, especially, it should so cover the tail feathers as to give the appearance of a very short back, the line taking an upward direction from within an inch or so of the point of junction with the hackle.

Form: head fine and well arched, the comb being erect, evenly serrated, and wholly free from reduplications and sprigs; in the hen minute; the face, wattles, and double ear-lobe, brilliant in colour,—the last-named feature to be fully developed, even in the hens; body broad and deep; legs short, stout, heavily-feathered to the toe, and, like the bill, of a clear yellow, although, beneath the scales, in the cocks particularly, a pinkish tinge appears. The form should be alike in all the varieties; and the same may be said in respect of weight. The adult prize cock not to be under 9lbs, nor the hen below 7lbs.

Lemon.—A yellow, or rather a canary tint; lighter than the above in both sexes.

Cinnamon (dark).—Cock: deep golden, inclining to red, hackle, back, and saddle, on a dark claret or plum-coloured ground; tail black. The hens have been well described as of the colour of wetted cinnamon.

Cinnamon (light).—Both sexes a rich cream-colour with cinnamon hackle, as also the saddle of the cock, whose wings are marked with the same tint.

Partridge.—Plumage; Cock: a black-breasted red bird. Hen: pencilled with black on a buff ground throughout, the darker markings prevailing; the pencilling not parallel, as in the Hamburgs, but rather following the outline of the feather.

Grouse.—The hens darker than the foregoing, less of the ground-colour being visible; the markings also are less distinct, closer, and rather to be described as a grizzle. Cock: a dark, mottle-breasted red bird.

White.—Plumage: uniform in both sexes.

Black.—Plumage: uniformly black in both sexes; of these, however, we have hardly ever seen a pen of adult birds in "perfect" feather, the cocks being almost invariably stained with red or copper feathers.

Grey, alias *Brahma Pootras*.—Uncertainty of origin seems to be here demonstrated by uncertainty of both plumage and features. Of the birds erroneously, as we most assuredly think, denominated "*Brahma Pootras*,"—understanding that term to depend on their specific distinction from the Shanghai,—there are two sorts; first, a dark pencilled bird on a cream-coloured ground; and secondly, a light-bodied bird, with dark striped hackle and tail, these last being far more striking in their appearance.

Combs must here be described as various, running from the single formation through gradations of a Malay character to the triple-folded, or pea comb. Under any circumstances, uniformity in the pen must be required.

*Cuckoo Shanghai*s exist, but their present obscurity best befits them, since in form, not less than feather, they are manifestly of inferior quality. The *Emu*, or *Silk Shanghai*, with the web of its feathers disunited as in the Silk Fowl, is not uncommon, but has no feature beyond this peculiarity to call for remark. They have been bred from the ordinary buff Shanghai.

Disqualifications for a Shanghai fowl: legs of any other colour than yellow. In the Partridge, Grouse, and Black birds, however, this statement should be qualified, since, in the two former, a slight wash as if of indigo appears to be thrown over them, which in the Black birds assumes a still darker tone; yellow, however, should appear partially even here beneath the scales, as the pink tinge does in the buff and white birds.

Misshapen combs are another eye-sore that cannot be passed over.

The Grouse and Partridge birds with light breasts should be disqualified; as also Buff and Cinnamon birds with a mealy character of feather.

One of our best Buff strains constantly produces cocks with more or less white in the larger tail feathers; this, although not to be considered as a disqualification, is yet, unquestionably, an objection.

Dark Cinnamon cocks are not unfrequently shown with Partridge hens; but any mis-arrangement of this kind is, of course, fatal to the chance of the pen.

THE January Meeting of the ENTOMOLOGICAL SOCIETY was held on the 1st inst., Edward Newman, Esq., F.L.S., President, in the Chair.

A numerous list of donations to the library, received since the last meeting, was read by the Secretary, and thanks ordered to be given to the Linnæan Society, the Literary and Philosophical Society of Liverpool, the Society of Arts, the Entomological Society of Stettin, &c., for the same. The Secretary also gave notice of the alterations proposed to be made in the list of the council and officers at the ensuing anniversary on the 22nd inst., the chief alterations being, that the present

President, whose term of office had expired, should be replaced by Mr. J. Curtis; and that Mr. Edwin Shepherd should be joined with Mr. Douglas as joint Secretary.

The President nominated the auditors of the Treasurer's account of the past year. He also exhibited a small piece of a new silken texture recently received from Vienna, spun by the caterpillars of the great Emperor Moth, *Saturnia Spini*, and forming a kind of felt impervious to wet. The caterpillars of this kind of Moth are not provided with a large stock of silk, but they are very common, and the object of the experimentalist has been to compel them to deposit their silk in flat layers, by confining them in low cages, by which means they are unable to spin a regular cocoon, and when a caterpillar has completely discharged its stock of silk, another is introduced, until the layer has acquired sufficient strength and thickness. He also exhibited a specimen of *Helobia impressa*, from Ben Nevis, a species of local variety which Mr. Dawson had omitted in his recent work upon the *Geodephaga Britannica*, or ground beetles of this country.

Mr. Douglas exhibited the nidus formed of a fungoid substance in the interior of a decayed Oak-tree by the larva of *Cratonychus castanipes*, a species of click beetles (*Elateridae*), not hitherto recorded as a native of this country. The larva itself, of which the cast skin remained within the nidus, proved that the insect itself is closely allied to the common wire-worm.

Mr. Downie exhibited a *model bee-hive*, shewing the improvements which he proposed in bee-hives, consisting of a modification of the mouth-piece, allowing partial or complete ventilation, and also of the floor-board, which, by means of a grating and movable tray, might be removed with the least possible trouble, and the dead bees and refuse of the hive removed, and which he was convinced was often the cause of the deaths of the stock. By his improvements, he had saved the lives of his stocks during the past year, which had been most disastrous to bee-keepers, as, within a circuit of nine miles from his residence at Barnet, he had ascertained that as many as five hundred hives had died off during the past year.

Mr. Samuel Stevens exhibited specimens of the magnificent *Jumnos Ruckeri* and *Dicranoccephalus Wallichii*, from India.

Mr. Curtis continued the reading of his Short Notes on the Economy of various Insects, the most material of which was the observation, that *Carabus glabratus*, a rare ground beetle, and the larva of one of the species of Staphylinidæ, or Rove beetles, had been observed in the act of devouring earth worms.

Mr. Waterhouse read a memoir by himself and Mr. Janson on the nomenclature of the forty-four British species of the genus *Stenus*, belonging to the family Staphylinidæ.

Mr. F. Smith read a memoir containing descriptions of a new species of *ants*, collected in Brazil by Mr. Bates, accompanied by notices of the habits of some of the species; one of these was remarkable for building

its nest within the nests of the white ants; whilst another, belonging to the genus *Myrmica*, had occurred in such immense numbers, that its dead bodies were observed lying in masses along the banks of rivers for a distance of eight or ten miles. Mr. Edward Brayley suggested that this circumstance threw considerable light upon the origin of the occasional accumulations of fossil insect remains of which Mr. Westwood had recently given some curious instances at the Geological Society. If, by any chance, the bodies of these ants had been covered by a deposit of salt, they would in course of time have become fossilised, and then would exhibit a very similar appearance to that of the Purbeck fossils noticed by Mr. Westwood. Mr. W. W. Saunders also mentioned, that on one occasion the shore of Norfolk was observed to be covered with such immense numbers of dead specimens of *Galeruca Tanacetii*, as to be rendered black by their presence.

SEASONABLE ADVICE AS TO HARDY FRUITS.

ALTHOUGH, perhaps, nothing particularly new can be said on this head, there are certain sound maxims connected with fruit-culture which are ever in danger of being forgotten, or neglected, by the inexperienced.

Everybody knows that this is the season for pruning, and that almost every fruit-tree requires a little of this necessary proceeding at least twice a year; that is, during the growing season, and the season of repose, or rest. It is not long since I offered a few practical hints on pruning, and there is little necessity to repeat them; indeed, the chief object of my present remarks will be to direct attention rather to the proper management of the root than the branch. So much about *modes of pruning* has, I am afraid, had a constant tendency to decoy the attention from those fundamental principles in root-culture, on which, above all other proceedings, success can be rationally based.

And first, as to depth of soil. This much vexed question irresistibly reminds one of the controversies in the agricultural world about the depth of drains; for, after all, it is by no means proper to insist on a given depth for fruit-trees; localities so much differ as to the natural depth of the soil, and the general character of the atmosphere, as to moisture or dryness, that even in the matter of depth it is highly improper to be pertinacious as to any precise depth. Notwithstanding this, lest I should be thought of latitudinarian notions, let me repeat, that what are termed deep borders are averse to the object of the cultivation of tender fruits; and, moreover, that what are generally termed shallow borders are highly favourable, providing the course of after-culture be adapted thereto. To avoid still further misconception, let me observe, that I consider a border a yard in depth, deep; one of two feet, a reasonable one; and one of little more than a foot, too shallow.

But, then, depth is not a mere abstract question; after that arises another of even graver importance; and it is this;—How much is the soil provided below the ordinary surface level?

I must here candidly confess, that I have many times been struck with the indifference with which even very good gardeners have regarded this part of the question. Our situation here, indeed, is dry beneath, and we have little reason to complain of water below, although vexed enough by climate above, especially in the month of April. But not to leave England for an example, let us consider such gardens or localities as Trentham, in

Staffordshire, where Mr Fleming, of whom all the gardening world has heard, is the head-gardener; and one so successful in what he undertakes, as strongly to attract the attention of all first-rate gardeners. The gardens at this princely seat are not many feet, I believe, above the river Trent, and situated in a flat district; to attain such eminent success, under such untoward circumstances, is, indeed, no trifling affair.

But to come to the point. Can any experienced man in the culture of garden-fruit affirm that there is no occasion to assume different levels in districts differing so much? I candidly declare, that were I to be sent off to the north of Ireland, or Scotland, to lay out a garden for a lady or gentleman desirous of coming out in the fruit way, and the soil, subsoil, and water-level were like the Trentham locality, that I should almost make the bottom of my "stations" for fruit-trees on the ground surface. This, to persons unacquainted with the gist of the subject, may appear a mere conceit; but, if so, it is possible they may be in error.

And somebody, perhaps, will say, "Why plant fruit-trees on soils which require so much particularity or fuss?" and, at first sight, it is a very reasonable question. The fact is, that the quality of the kitchen-garden or orchard is not always permitted to bias the whole affair of whether "the seat" shall be here or there. Valuable as are these considerations, there are others of even greater import; such as the neighbourhood we love best; the best scenery; economical ideas; and antecedents, perhaps, which nobody but those who originally determined on the spot can either know or appreciate in the same spirit.

Such being the case, I have, I conceive, an apology for arguing as to the necessity of taking *the character of the locality* into consideration, when we come to the matter of tender fruit-trees.

Those who have watched the gardening press during the last half-score years, must have noticed the complaints occasionally urged on the evils of cold, clayey soils, or subsoils, and a damp, or cold condition of atmosphere, by persons in the south, high in fruit-culture. That they have most unhappy climates, and sterile, clayey soil; or, in other words, must be troubled with stagnated moisture, may be the case; but admitting this, how is it that persons in the northern counties are so frequently astonished when they read their complaints of *Marie Louise Pear*, and such like good things failing, when they, the northerners, have plenty?

But, here, in a moment, the question of stocks rushes into my mind. I have before suggested, that Pears on Quince unfortunately blossom, or swell in the bloom-bud, earlier than those on the free, or wild Pear stock. Such is the result of my observation; if I am in error, doubtless, I shall be corrected. With all the real and supposed advantage of the Quince stock, then, this is a serious matter, and as I have before named the thing in the pages of *THE COTTAGE GARDENER*, and no one has confuted it, the fact would appear to the established.

As to sterile, or cold soils, and bad subsoils, those planting tender fruit-trees can avoid both one and the other. Soils too adhesive may be corrected with ease, by the admixture of materials which are everywhere at hand for looking after. Most districts possess sand, or loose soil, within a reasonable distance; and if not, there are many substances equally efficient as correctors of the staple of the soil; charred weeds, turfy materials, or even burnt soil, are excellent correctives; and then such things as charred sawdust, road scrapings, the limey rubbish from old buildings, ditchings from sandy or light soils, &c. Some, or, indeed, most of these are within reach of those who have stubborn soils to correct. Forecast and labour, of course, are requisite. The stubborn soil to be used should be thrown out to the action

of the frost for several weeks, and when dry, in March, may be reduced, and the other materials incorporated. So much for the stubborn clays, or clayey soils, so often complained of. The management of wet subsoils, however, in such cases as that quoted concerning Trentham, is another affair; especially when a dull level prevails, and that level, in the main, only a few feet above some stream in the locality. But even here the difficulty is by no means insurmountable; and this brings me at once to the practice of *STATION MAKING*, which, by economising composts, and throwing off the fetters imposed by what is termed border-making, renders the fruit-trees perfectly independent of all excesses formed beneath, and reduces the question of tender fruit-culture to those atmospheric conditions, local or general, by which the foliage, blossoms, or fruit, may be affected.

Surely, it does not require much logic to prove, that when one-half the volume of roots of a given tree is above the ordinary ground level, those roots must be situated, on the average, in a drier medium.

And suppose a case in which the natural surface-soil is only about a foot in depth, and that the planter desires about two feet of soil for his tree to grow in; is it not obvious, that by making what is called a hole for the tree, the roots, where they reach the side, will be either imprisoned, as it were, or enter an improper medium?

I have no doubt that more trees would be planted above the usual level, but for the fear of an unsightly appearance; but if so, the conclusion is a wrong one. A tree planted above the level, or a high border, may be made to carry as high a finish as on the ordinary level; and if it were otherwise, surely, the point might be conceded for the sake of the welfare of the tree. I must confess that I have indulged in a somewhat rambling discourse; but I trust some useful hints will be found in my remarks.

R. ERRINGTON.

PROPAGATION BY MEANS OF ROOTS.

WITHOUT going back further than the time when the Potato was introduced, we may assume that propagation by means of roots was established in England to increase "seed Potatoes;" cuttings of this root, with buds or "eyes," did as well as whole roots; but a whole Potato, without eyes, will not grow, increase, or multiply. Large roots of Yams, without eyes, will no more grow than Potatoes. I have seen Yams from many parts of the world—some as long as my leg, and thick as a child's body; also Yam-like roots, widely apart from the real Yam family; not a particle of which would grow without an eye—nor the whole body, in one lump, if the eye parts were cut out. Still, one sees "blind roots" of Dahlias, Pæonies, and others, make new roots, which suck in moisture as if they were acted on by leaves.

In 1825 I received strict charge to water a blind Dahlia-root in a pot as regularly as any of the rest of the collection; and I did so, and kept the tuber at the full stretch of its skin the whole summer and autumn; in October, this root was treated like a bulb which goes to rest for the winter. About that time some one wrote in a book, that the fibres of deciduous plants died in the winter; and the doctrine that leaves make roots, and roots leaves, was beginning to attract attention, even in the Highlands. My Dahlia-root was intended to prove two things, or disprove them; and an experiment, to disprove or confirm one thing more, was intrusted to a young man named Grant, who was from the garden at Castle Grant, in Strathspey, that same October. The subject of Grant's experiment was an Elm-tree in the corner of the framing ground; and the thing sought to be proved or disproved by it was the

same as that by the Dahlia-root, namely, to see if fleshy roots like those of the Elm, and tubers, such as those of the Dahlia, could make young roots and fibres without the assistance of leaves; and, if they could, whether it was true, or not, that fibres, or the extremities of roots, wore deciduous, and fell off, like leaves, on the approach of winter.

The result with the roots of the Elm-tree was far more curious, and more against the idea of deciduous fibres than that of the Dahlia-root. A hole, a foot in diameter and nine or ten inches deep, was made where the Elm-roots were numerous; all the big roots were cut to the side of this hole, and the little roots, or fibres, were left half through the pit and all round it. Then the pit was filled with rich, light stuff from the compost, or rubbish heap, and a mass of fresh stable-dung for the frames was placed near the Elm-tree early in November, and a fermenting heap of dung and leaves was kept "off and on" over the roots till next May. In February, the hole was carefully opened to see the state of the roots; none of the fibres had fallen off, and, not only so, but they increased in size, in numbers, and in length, considerably, during the winter, from the stimulus by the warmth from the dung and leaves.

Seven years after that I proved the same experiment, without intending anything of the kind. Some young evergreens were planted in October, near a large Elm-tree, but had to be taken up in the spring, because a different plan of improvement was thought of in the mean time. In every one of the holes where the evergreens were planted in *fresh soil*, the roots of the Elm pushed several inches during the winter; I think, in one instance, a root must have lengthened ten inches from October to March.

Since then I have made various experiments, which, however, are foreign to "root propagation," but from which, I confess, I cannot wholly subscribe to one of the firmest articles in the creed of vegetable physiologists, and one, too, on which the foundation of the gardeners' practice of the present day is mainly founded. I allude to the doctrine, that roots cause the production of leaves, and that leaves cause the production of roots; and that, in most instances, the one cannot be produced without the other.

How many years a blind Dahlia-root will live and make fresh roots I do not know; but the one I had under my care rested all that winter, and shrivelled up a good deal; but next spring and summer it rooted afresh, and swelled out as it did the year before. After that I left the place, and heard no more of it. Now, it is well known to most gardeners, that such roots and tubers as do not sprout without they have buds, or eyes, like Potatoes, make good "stocks" for grafting on, and a largo branch of practice is founded on this knowledge. There are other roots, however, without the least apparent sign of eyes or buds, and every morsel of them makes a new plant.

Another large branch of our practice is founded also on this peculiarity; but roots of this last class are not fit for grafting on, although some propagators make use of some of them that way. When "Smith's yellow Noisette Rose" first came out, scores of people were deceived by their plants being grafted on pieces of the roots of all manner of Roses; and suckers from the piece of root took the place of Smith's Rose in nine cases out of ten, as gardeners did not then know the habit and the looks of the new Rose, from the morsel of it in a pot, for which they paid their ten-and-six-pences. I recollect when there was nearly a rebellion between country gardeners and the trade about this Rose, and that way of grafting it. Still, if a good choice is made in Rose-roots, there is no other way by which a new Rose can be so easily and so quickly propagated for use, in private hands, as that by grafting on the selected roots.

Mr. Rivers says, in his "Rose Amateur's Guide," that the roots of the *Manetti* Rose do not throw up suckers, like many and most Roses, therefore, pieces of the roots of this Rose, about four inches long, and from the size of a pen-holder to that of a darning-needle, would make the very best stocks to graft on this next spring. The French, and more particularly the Germans and Italians, make use of the roots of the old common *China* Rose for grafting on, in preference to all other; many notices of this way of grafting were sent by the parties to Mr. Loudon's books; but we hear very little about them now. I grafted many Roses, one year, on the roots of the *Boursault* Rose, at the time I thought the *Boursault* Rose a good stock; but in four years they spawned from these roots, as much as from the *Boursault* itself.

A most vigorous Rose-pillar was pointed out to me, last week, by one of our best Rose-amateurs here, which is worked on the *Boursault*, and never throws up a sucker, or but very seldom; the reason seems to be, that the Rose for the pillar is of a stronger constitution than the stock, and that the roots cannot afford to provide the needful supply to the stronger Rose, and make suckers at the same time. From this we ought to learn *not to bud or graft a Rose on any stock which is much stronger than the Rose so worked*. Suckers are the sure consequences of working a weaker Rose on a stronger stock; the stronger roots must have a vent in some way or other, and suckers are the more natural way of using up the greater supply from the roots.

Some people are more expert at budding Roses; some do not succeed so well with budding as with cuttings; and some are more successful with grafting. I once knew a man who could not strike Dahlia cuttings, "if it was ever so;" but he never failed in grafting them on the blind tubers, late in April.

Tree Pæonies are difficult to strike by cuttings, and few, in this country, can work them that way; they do better grafted on blind tubers of the herbaceous kinds, and even that way, they are among the most difficult to graft of all plants we propagate by root-grafting.

Root-grafting is the easiest of all kinds of grafting, as it can be done by the fire-side, without any stooping; worsted thread is the best thing to tie such grafts with, and the best clay for such grafting is a thick paint of clay and water put on with a small brush, made with a piece of matting on the end of a stick, or a tuft from an old hair-broom; and to keep the paint from cracking, nothing is so good as a little dry sand dredged on while the paint is yet soft; then, if the grafted part is buried in the soil in a pot, and the pot is placed in a warm pit, the graft is almost sure to take. Almost any plant will graft on its own roots, and many plants are, or may be, increased that way easier than by cuttings; an Apple graft, or a Pear graft, will work on a small piece of the root of the same trees, and so will a Jasmine, and a thousand other plants, so that one need never be at a loss for a stock for this or that plant, if he has the plant by him.

The particular plant which runs in my head all the time I am now writing, is the beautiful *Dielytra spectabilis*, for this is just the right time to pot the roots from the open borders for flowering early in-doors. This time two years I took up my only plant of it, and divided it into eight pieces, as I would an old Dahlia root, with a bud or buds to each piece; but there were six times more blind, but fleshy roots, which I could not use, and I dressed them and put them in by the heels to be ready to graft by the following May or June; but I forgot to do that, and this time last year I had as many plants, by dividing, as I had need for. Still, the roots which I had in by the heels, at the end of twelve months were as fresh as ever, but never made a single fibre all the time; and last week, when I was trenching the border, the same roots were as fresh as ever, and quite fit for

grafting on at the end of two years; but I dug them in this time, and made a fresh bundle from a lot of plants which I had just potted. Perhaps I may graft on these roots next summer; perhaps not. This plant comes from cuttings as easily as a *Verbena*; but one does not like to cut it while it is in bloom, and it must have time after blooming, and be planted out-of-doors, before a fresh growth is made from which cuttings can be had, and by that time my hotbeds are not hotter than the common border, and cuttings of this plant are troublesome without a little close heat; but by grafting with shoots that are three or four joints long on my reserved roots, and by a hand-glass, and no artificial heat, I see no reason why I should not turn every bit of my blind roots into a *Dielytra* in one month; and as no one can get all the fanged roots of a nice plant in the border into an ordinary sized pot, and, also, as two-thirds of all the plants of it in our private establishments ought to be potted *now* to come in in succession to the end of May, it seems a pity to lose so many roots till every cottage garden in the country has enough of it.

Another way to make the best of it would be to pot a root or two at once, and to force it on purpose to make cuttings while the hotbeds and the bedding-plants are in hand for the spring propagation, and every shoot with two joints will soon root and make a nice plant for turning out into the open borders in May. After that, dividing such plants in January in each year will give one more than enough of it. I cannot suppose such a state of society here in England, even if the Russians were to get the better of us, and make us as rude and ruthless as their own serfs, that we could ever live without putting so many roots of *Dielytras* in January as each of us could find room for, and time to admire in March, April, and May. To have it in bloom from November to May would be better still; and I think I have just discovered how that could be done, and I shall tell it in my next.

D. BEATON.

RHYNOSPERMUM JASMINOIDES CULTURE.

THE above is another plant about which various enquiries have been made. There can be no question as to its being a very desirable acquisition from the flowery empire. It has been represented as a real citizen-of-the-world plant, thriving against an open wall quite as well as the *Jasminum revolutum*, and almost as well as the *Jasminum officinale*, while in greenhouse, intermediate house, and even in a plant-stove or forcing-house, it is equally at home. My own experience of it as an out-door plant has been nothing to boast of; in fact, a failure, but such a failure as neither to deter myself nor others from making other and repeated trials. From my own experience, I should say, that its most legitimate home was either a warm greenhouse, or an intermediate house, between plant-stove and greenhouse. In a cool greenhouse it should have a good position, have the wood well ripened the previous autumn, and be kept just as moist as to prevent anything like flagging. In such a house you may expect flowers from the middle of June to August. But, provided the wood was tolerably browned in the autumn, you may have bloom any time, especially after the new year, by merely placing the plant in a nice, moist, sweet heat, about 60°, with a rise of from 5° to 10° from sunshine. The flowers may be had before that time, but in the dull months of winter the flowers are apt to damp, to become dull in colour, and to lose much of their sweet fragrance. The following points will give an epitome of its culture:—

1. *Propagation*.—Oldish pieces of the wood inserted in sand, under a bell-glass, will strike in summer, in

any cool place, but you must exercise patience in waiting for the rooting process. The best mode, at least the one that will reward with the earliest success, is to select a few short, stubby side-shoots in March, April, or May, about two-and-a-half inches in length, the point being in a growing state, and the base somewhat hard and firmish. Cut these across at the base with a sharp knife, in the usual way, remove a couple or more of the lower leaves, and then insert them in sand round the side of a small pot, that to be packed into one a size larger, and the bell-glass placed firmly down in the space between the pots, after the cuttings were watered, and then the double pot plunged in a sweet heat from 75° to 85°. In a few days it will be necessary to edge-up the bell-glass at night, to prevent damping. This damping is very likely to occur if the shoots are young, and not possessing the above-mentioned firmness at the base. In a few weeks the cuttings will want, each of them, a separate little pot, and should be plunged again in a similar place, but with the bottom-heat from 5° to 10° lower, which will be sufficient to encourage rapid growth, and yet not weaken the constitutional system of the plant. After potting, the young plants will require frequent slight syringings, and slight shadings in bright sunshine; but the sooner the plant will stand the sun without shading the more robust it will be; and after receiving another shifting more air should be given, and the plant should be stopped if there are not already from three to six shoots nearly equal in length, if it is intended to grow the plant on a trellis. If to be grown against a column, or rafter, one shoot should only be taken until it reaches the necessary height, when it may be stopped, and thus a number of branchlets secured, according to the room it is to be allowed to occupy. The object in view, therefore, should form a matter of consideration when choosing plants in a nursery; a low, bushy plant being preferable in the one case, and a tallish plant, with few side-branches, in the other.

2. *Soil*.—In the first pottings, I prefer about two-thirds of fibry peat, and one of fibry loam, to which add nearly one-third of silver sand, and small bits of charcoal from which the dust has been excluded. The compost should neither be beat to pieces with a mallet, nor knocked into smithereens with a spade; but broken with the hands, and passed through and mingled by them, a good proportion of the compost for the first potting, before the sand is added, being of the size of large peas; while, for the next shifting, some of the pieces of fibry turf and peat may be as large as field beans. As the plant requires more pot room, increase gradually the quantity of the loam, until when the plant is settled in an eight, or twelve-inch pot, fully two-thirds of the compost may be fibry loam.

3. *Growing, Training, and Position*.—Great things cannot be expected from a plant in less than two or towards three years from the cutting. A nice, bushy plant, obtained from a nursery this spring, and grown rapidly during the summer, and the wood well-ripened in autumn, would yield a fair portion of bloom in the spring or summer of 1856, just as extra heat was given to it, or it was allowed to bloom more naturally. A nice general temperature of about 60° at night, will be the best for encouraging growth in a young plant, and if that can be given in the early spring months, the plant has just the length of nearly two summers, instead of one in a common greenhouse. Plenty of water, of course, must be given, and it will not at all decline a little weak manure-water once a week. Frequent syringings over head will also promote health and keep down insects, especially green fly, which attack the young shoots when grown in a moist heat with great voracity. By August more air should be given, and in September a full exposure to the sun, even without glass, as soon

as the plant is inured to it by degrees. In October it will require to be housed, and the water gradually lessened as the days get shorter and darker.

The training has been already alluded to. I believe, that in a warmish greenhouse, trained along a wire, it would yield as sweet a perfume, though by no means present such a dense mass of beauty, as the *Mandevilla* at Stockwood. In keeping the plant to a trellis, one of a round form is best, as the bending the shoots round has a tendency to curtail extra luxuriance in growth, and thus so far promote their thorough ripening. Mr. Appleby has lately mentioned a nice substitute for the rather extra methodical wire and wooden trolleys in common use. At one time, I used such trellises largely for summer-blooming climbers and creepers for the greenhouse; but I never could get them altogether to please me until the trellis was completely concealed, and the creeper and twiner dangled carelessly from them. As a change, I used often to adopt a plan similar to that recommended by Mr. Appleby, and which he saw practised by Mr. Ivison, at Sion House. A plantation of young Larches, or Spruce-trees, was looked over, and a young tree, thick set with branches, was obtained, or the top of an older tree where thinning was required, or even some branches well set with branchlets and twigs were cut just when the sap was freely in motion. A few minutes served to divest every twig of its bark, and in this state the young trees were allowed to remain until they had hardened by exposure, and got a greyish-brown appearance, when the young tree, or two or three branches, were fixed in the pot, and the shoots taught to mount negligently from twig to twig. There could be quite as much of the artistic shown by this mode as was necessary, while there was less obtrusion of art than when the neat wire trellis was used.

With respect to *position*. If the plant is to be kept in a common greenhouse, it will be as well to keep it there during the season, unless giving it more direct sunlight in the autumn months; but, if it is desirable to have plants that will flower early in spring by giving them extra heat, then it will be desirable to give the plants a help on the previous spring or summer, by placing the plants in a low-temperated forcing-house; or moving them from the greenhouse, as soon as they have flowered, into a pit which can be kept close, to encourage growth before exposing the plant to more air and sunlight in autumn.

What pruning the plant will require should be given immediately after the flowering is over,—all the little flowering shoots, and what older branches that can be spared, being removed, the flowers of the following year being produced from the well-ripened buds of this season.

JASMINUM GRACILE.

This, I think, has previously been referred to. So far as beauty is concerned, it has even less to recommend it than the *Rhynchospermum*, the flowers being small and of a dullish white; and yet they are so pleasingly sweet, and produced in such numbers, as to make it a most desirable greenhouse plant. I have not tried it out-of-doors, but it is, seemingly, much more hardy than the *Rhynchospermum*; and though it will force pretty well, it will not stand so much heat by five or ten degrees. It is, therefore, a very-easily-managed greenhouse plant, that blooms very freely for several months in summer. Good fibry loam and a little peat grows it well. Every well-ripened bud on the wood of this year will produce a short shoot, terminated with bloom on the next. I have tried spurring and long shoots, and I prefer the latter when pruning the plant. The plant is gone over after blooming, the blooming-shoots cut out, as far as convenient, and the young, growing shoots laid in their places. In August and September all the air and light possible are given, and,

by the end of October, the plant should be housed, where it will be kept rather dry and free from frost during the winter.

BEGONIA FUSCHIOIDES.

"This has never flowered properly, and for the last three years has never flowered at all. I should feel obliged by any information how I could make it to flower." I have seen plants of the age you mention, some seven feet in height, five feet in diameter, and almost always well covered with bloom, summer and winter. The system consisted in always keeping the plant slowly growing, with the frequent check of a not superabundance of water, and a full exposure to sunlight, and a temperature, at night, ranging from 55° to 60°. By such a mode, there was a firmness given to the side-shoots as they advanced in size, and flower-buds were formed in consequence; the want of bloom has, generally, been owing to the too free growth, produced in a high temperature, with a considerable amount of shade, with a deficiency of sunlight and air, to give the maturing, as well as the growing, processes a fair chance. This is what you must do with your old plant, if you mean to keep it, but after taking some cuttings from it, by the end of February,—I would recommend adding what remains to the rubbish heap. These cuttings should be some of the firmest side-shoots you can obtain, about two or three inches long; place these in sandy soil in a pot, and plunge it in a brisk bottom-heat, in a lothed, where the bottom-heat will be from 80° to 90°, and the top-heat about 60°. You will perceive I recommend loam and sand, because if all sand, the surface, when kept wet, becomes so dense that no air can easily enter, and the shoots being rather succulent there is danger of damping if the air is wholly excluded. In a month these cuttings will be plants, and should have a small pot each, and be placed in a similar position, with only a little reduction in the bottom-heat. The plants may be shifted on the succession system twice before July, a rather close atmosphere being kept until then to encourage growth. By August the plants should have no shade, if it can be avoided—should have every ray of sun under the glass that they can stand; the pots should also stand above or free from any plunging material, and if come-at-able, a pit where they could secure a temperature not much below, and never above 50° at night, unless the night was naturally warm, would be the best position. In October, remove such plants to a plant-house, give them there no more water than will keep them from flagging, full exposure to sunlight under the glass, and a temperature 5° to 10° higher. By the month of November, and onwards, flowers will be pretty freely produced, and nice little plants, in a cone shape, and two or three feet high, during the winter, are a great ornament to a plant-stove. A continuous though rather thin flowering, may be secured by the mode already indicated; but for great masses of bloom, there must be a growing period of a month or two, and then a comparative resting and maturing period. Young plants are much more easily managed in this respect than old ones, and, therefore, unless there is the ambition to have a monster plant, young ones rising two years old are quite old enough. As has been seen, cuttings inserted in February or March, and grown rapidly, will bloom the following year. The same plants, slightly pruned in spring, re-potted and encouraged to grow, would bloom more early. The plant grows naturally so gracefully that little training is required. I think they look best in a pyramidal shape, with one stalk in the centre.

This plant is not particular as to soil; a mixture of loam and peat, enriched with leaf-mould, or cow-dung, will grow it admirably.

R. FISH.

TEMPLE NEWSAND.

THE SEAT OF C. H. M. INGRAM, ESQ.

THIS fine old place, four miles from Leeds, formerly belonged to the Knights of St. John of Jerusalem, and is very happily situated on a commanding eminence overlooking the fertile valley of Airedale. The park is well clothed with noble trees, and there is a fine avenue of ancient Elms, shading the carriage drive from the scorching heats of summer, affording shelter to also a very large herd of deer.

The gardens have been famous for many years for the production of excellent fruit, especially Pine-apples; and it is somewhat remarkable that the head-gardeners have been of one family, in succession, for three generations. The first, Mr. Taylor, was a most excellent man, and, probably, was the first gardener in Great Britain that produced *Queen* Pine-apples weighing five or six pounds weight each. In his time, the place was quite noted for good gardening, and was reckoned the best school for young gardeners in Yorkshire. Unfortunately, when at the zenith of its reputation, a tremendous thunderstorm, accompanied by a heavy shower of hail-stones, completely destroyed every pane of glass, and, in a great measure, the Vines, Pines, and other plants. This is more than forty years ago. I was living with my parents at the time, about three miles off, and perfectly remember observing the black clouds that overhung Temple Newsand. Such was the destruction, that the then proprietor did not think it prudent to repair the houses, and they remained in that dilapidated state for many years. In the meantime Mr. Taylor died, it was said, of a broken heart, and was succeeded by his nephew, who held the chief command of the garden establishment till that remarkable and deplorable year that the Asiatic Cholera visited the British shores. He was on a visit to London at the time, and caught the infection, came home, and died. His son, the present gardener, was then, comparatively, a youth, but the present owner of the place thought him a sufficient gardener to manage the place, and gave it to him. His judgment of the youth was correct. Under his fostering care, supported by liberal encouragement, the houses have been rebuilt, and there are now there as good Pines as at any place in the kingdom.

The last of the old houses was pulled down last year, and handsome ones put up in their stead. The central one is for stove-plants, with a vinery on each side. Beyond these there is a lofty conservatory, of considerable extent, filled with noble Orange-trees, and Camellias in large pots and tubs. The back wall is covered with Camellias planted out, and very well they look, with foliage dark green, and healthy, and abundance of flower-buds on every shoot. The first year this house was finished almost every leaf was destroyed. The glass was of the usual kind, in large squares, and such was the power of the sun's rays through this clear, transparent glass, that all the leaves of the plants inside were scorched and completely turned white! Mr. Taylor had it covered with whiting and various kinds of shades, and at last has recovered his plants, and got them into as perfect health and good colour as is possible. I visited the place on the 5th instant, and can bear testimony to the fact. Many of the Camellias were covered with bloom of the finest colours.

The gardens are of great extent, placed on the sloping side of a hill facing the south. The situation is good, being neither too low nor too high. It is pretty well sheltered from the west winds by lofty plantations, and surrounded by good brick walls, covered with healthy, beautifully-trained fruit-trees. The principal cluster of glass houses is on the lowest part of the garden, but there is a range on the highest wall, occupied with Vines and Orange-trees. These two fruits, Mr. Taylor says,

do well together; and, certainly, the Orange-trees looked beautiful. The house is lofty, and the Vine stems are, consequently, long, or rather, I should say, tall before the bearing wood commences. In a conversation I had with Mr. Taylor, he gave it as his decided opinion, borne out by experience, that "the further the Vine extends its bearing-shoots the finer will be the fruit;" and, certainly, this idea is borne out by experience, for every Grape-grower will readily admit that the finest Grapes are, in general, those that are the furthest from the root. The Vine stems in this house are at least nine feet high, the front glass being that height, and these Vines produce excellent fruit and plenty of it. At each end of the house a Vine is planted. One is that famous variety the *Black Barbarossa*, and the other is one known as *Lady Down's Seedling*, a variety not much grown out of Yorkshire; but said to be a large, fine, black Grape, of an oval shape and good flavour, though rather tough-skinned, a circumstance that accounts for its good keeping quality. When this variety becomes better known it will be in demand, and more generally cultivated. The leaves, when decaying, change to a scarlet hue; they are very deeply cut, rendering the variety very conspicuous. The Orange-trees in this house, ten in number, were covered with fruit quite ripe, and of a good size. The trees are all standards, with fine heads, and good, healthy leaves. They are regularly pruned, and are certainly improved thereby, not having that close, dense, cropped appearance that many Orange-trees imported from the continent have.

Large garden establishments, like the place now under notice, have, necessarily, a great number of fires, which, when early forcing is going on, and the fires for Pine-stoves, &c., are all belching forth their inky clouds, the garden looks something like a manufacturing district. This always appeared to Mr. Taylor as a capital subject for indictment under the Nuisance Act; and, therefore, to prevent such a catastrophe, he set to work, whilst the new houses were erecting, and so arranged the flues from every fire, however high or low, that the smoke was all collected into one main flue, two-and-a-half feet deep and two feet wide. This main is carried right up the garden, under every walk, wall, and hedge, into a field, some distance behind the garden, and there carried up a substantial brick chimney, some fifty feet high. The smoke from upwards of twenty fires is thus carried clear away from the gardens. In many instances, the smoke has to descend several feet to get into the main, but that makes no difference, the draught is excellent. I saw a piece of coal laid on the fire, the door closed, and in less than three minutes it was in a perfect state of combustion. Many were the direful prognostics of the wise-acs that the scheme would fail. Some said, the smoke would, nay could, not possibly descend; others said, it would be necessary to keep a fire constantly burning at the foot of the tall chimney, to cause a draught, or to dry up the damp, from the long flue through the garden; whilst others were sure that flue would frequently blow up by hot air meeting cold. All these Job's comforters, which every man of genius has to contend with when he departs out of the ordinary mode, were, in this case, entirely proved to be false prophets; for there the smoke rises; there the flue stands, and every fire and boiler does its work regularly as clock-work. Formerly, the glass outside was smoke-begrimed, the slates of the sheds as black as soot, and even the plants inside became of a cloudy hue; but now—I speak from actual eyesight—the glass is quite clean, the slates are becoming white, and no plants anywhere look so bright and clean; even they are like the school-boy with shining morning face. This carrying away the smoke is not, however, confined to these gardens; the same is done at Badorgan, in Anglesea, and Osmaston Manor, near Derby, and probably in many other places; yet it is not carried into

practice in every garden; which I am quite sure it ought to be; and I wish I could make my voice heard from John o' Groat's to the Land's End. I would proclaim, with all my might, the important fact, that gardens need not be annoyed or injured by the smoke arising from the necessary fires. I asked how this long flue could be cleaned; and the answer was, such was the draught that no soot accumulated, or was deposited; but if it should, a provision had been made by covering it over every thirty or forty yards with a flag-stone which could be lifted up, and the flue cleaned very easily.

The Pine-stoves here are all low buildings, and are half-span-roofed; that is, the south-side lights are the longest, in fact, twice or more the length of the back lights. It is justly thought here, that there is as much pleasure in seeing the Pines grow as in eating them; hence the paths are widely commodious, the entire back slope of the roof being for the walk. To render this more interesting, the back walls are covered with flowering plants. At this season (January), of course, there are not many in bloom; but I noted a fine specimen of that good old plant the *Eranthemum pulchellum*. It was five feet high, and covered six feet of the wall lengthwise; the flowers were larger, and the spikes longer than I ever saw them; also, the *Euphorbia jacquiniiflora* was very splendid, with its bunches of bright scarlet blossoms. In summer, I was told, that these walks are covered overhead with all the best stove-creepers.

The Pines grown here are chiefly the *White Providence* and the *Montserrat*, with a few *Queens* and *Prince Albert*. The latter, a rather new and scarce variety, though a very excellent summer fruit, growing to a great size and good flavour. It is a long Pine in the style of the *Enville*. The system of Pine-culture followed here is that of planting-out in a bed of soil, and the quick-fruited method. After the fruit is cut, the old leaves are shortened in, and the suckers encouraged to grow by watering freely, and occasionally with liquid-manure. As soon as there is room for them, and they have become of a good size, they are taken off the old stool and planted-out at once, and there they remain till they fruit. I saw suckers of *Montserrat* so treated, that had such broad leaves that I could scarcely credit their being that variety. I certainly should have taken them for *Providences*. Six of the *Prince Alberts* were showing fruit, and most extraordinary shows they were. I counted one of them fully sixteen pips deep; they must make splendid fruit when fully swelled up.

The Pine-stoves were as clean as possible; every stone was scoured by a woman as clean as if in a dwelling-house. In fact, it was quite a pleasure to walk through them, and see the healthy Pines on the one hand, and the flowers on the wall on the other; and, indeed, this was the case in every house; all were as clean as though the Queen was expected, and yet *the family was not at home*.

In the new Plant-stove I noticed a fine plant, six feet high, of that new and charming winter-flowering plant the *Thyrsacanthus rutilans*. It belongs to the Acanthaceæ, or Justicia-like tribe of plants. The leaves are broad and as long as the common Laurel; the flower-stems spring from the axils of the leaves, and hang down almost perpendicularly. The flowers themselves are of the brightest scarlet-crimson, and were so numerous in this specimen as to clothe the stem entirely, so that it had the appearance of a scarlet column of flowers. It reminded me of an old favourite plant of mine, the *Russelia juncea*, only the flowers are of a deeper colour. As a winter-flowering plant it is invaluable, and ought to be in every collection. I wrote, lately, about *Franciscea confertiflora*. In this stove I was pleased to meet with two plants of it better grown than I ever saw it anywhere. They were about one-and-a-half feet high, and as much through; nice, healthy, bushy plants. I counted more than twenty heads of

flowers on each, just ready to burst into bloom. In a month's time they will be a pair of really beautiful objects. There was, also, a noble specimen of the *Medinilla speciosa*, with its fine racemes of rose-coloured flowers and purple fruit; also *Eschynanthus speciosus*, very well grown and finely in bloom; besides many species of that useful tribe of plants the Begonias, and a good specimen of the old *Strelitzia regina*, with its noble leaves and tall spathes of orange and purple blossoms. All these, the reader must remember, were blooming in a stove only finished last August. In the same house was a platform of Roses, of the Perpetual tribes, in full flower, and another, a second batch, to succeed them.

I see I have a note about Vines planted in a pit for early forcing. There was something about these which I must attempt to describe. The house was in a similar form to those I have described in which the Pines are growing. The rafters are eight in number. There is a pit inside the length of the house; this is filled with good soil, and two Vines had been planted two years ago in it. The peculiarity consists in planting the Vines close to the path at the back of the house, and training a main stem from each to the front, then stopping the shoot, and causing two eyes to break and form two shoots, which are trained right and left; from these shoots four other shoots are trained back again up the rafters, and thus every rafter is furnished. In this, Mr. Taylor's idea, that the farther the Vine travels the finer will be the fruit, may be seen carried out; and, certainly, the roots will be certain to travel to the front, and thus fill the pit with roots, and thus extract all the nutriment out of the soil to feed the Vines. Had they been planted close to the front the roots would not have been so sure to travel backwards into the pit. My space is quite full, or I might have mentioned many other good points of garden-culture carried out here; especially a fine crop of Mushrooms, and excellent Strawberry plants for forcing. I have said enough, I think, to prove that this is a place well worthy of a visit, and a close inspection of the gardening operations. T. APPLEBY.

FORCING DWARF KIDNEY-BEANS.

In places where there are a number of forcing-houses of every description, with abundance of heating material, both in the shape of fermenting matter and fuel, French, or dwarf Kidney-Beans, like Cucumbers, may almost be had at any time; but as this is not the case everywhere, and in many instances the forcing department is overcrowded with objects all claiming attention, it becomes necessary to make such a selection as will enable the cultivator to command the articles most wanted at the most fitting time; and as this principle will, of course, vary with the wishes, or wants, of the interested party, it must rest with the superintendent of works to give the requisite attention to the "particular one," which its position, in the eyes of the family, seems to deserve. Some vegetables have a universal interest. Peas and Potatoes are always acceptable, while, perhaps, some will be giving a preference at certain times to the article forming the subject of the present chapter, and though it is herewith brought prominently forward as one deserving of notice, I deem it necessary to caution the amateur who has but very limited means against engaging in it without duly considering the cost; for though he may derive a good deal of pleasure, and a lively interest, in the production of a small quantity of forced bulbs in pots, which might stand altogether on a small tea-table, yet he must not expect his appetite gratified to any extent with the produce of French Bean plants occupying a like space. I deem it necessary to mention this, because some unsatisfactory

mistakes are occasionally made in that way, and it would be wrong to induce the very small cultivator to attempt the production, as it could hardly fail in disappointing him; and though horticultural writers, like those in other departments, may be now and then found advocating the cause of "the million," as they are pleased to call it, and asserting the possibility of their being "easily" supplied with many things now considered as the most expensive luxuries of life; the time is yet distant when the poor man will have his dish of French Beans in February, his well-flavoured Pine-Apple, or his well-toned piano-forte, or similar luxuries; so that it would be wrong, in the present case, to recommend the adoption of one class of forcing to the exclusion of another, without first considering whether the new one be more advisable than the other.

Where the means of the cultivator allows it, French Beans put into pots in October will, with care and attention, and the requisite heat, produce a thin crop of fruit in February; but not more than one-half that the same plants would have yielded in August in the open air. But, then, this is *February*, and the novelty is great. It is not every crop that succeeds well at this untoward season, and it is only fair to warn the inexperienced, that a very strict attention indeed is required to carry the plants through the "dark days" in a healthy condition; for, be it remembered, this production is from a tropical clime, and, being an annual, it is only in a natural state produced during the summer months there, where the amount of sunshine and light forms a marked contrast with the dull days of an English December, when it not unusually happens that we are not blessed more than one day in the week with a sight of that useful luminary; and though we can command heat by artificial means, and, to a certain extent, can give dryness, or moisture, to the atmosphere of the structure where the plants are placed, yet all our efforts at a substitute for the "all-important ruler of the day" come immeasurably short of the mark; and though it is considered impolitic, now a days, to doubt the adoption of any wild speculation, however improbable, we are, nevertheless, not likely to witness the production of an "artificial sun" equalling that of the "natural one," and as the article now treated on is influenced more, perhaps, by sunshine than any other agent, it follows, that when "compelled," as it were, to yield its fruit at an unwonted season, a great sacrifice must be made somewhere; and as the skill and management of the cultivator is directed with a view to make the loss as small as possible, a few words on the means to be adopted will not be out of place here.

In the first place, we will suppose the amateur has a Vinery in which he wishes to have Grapes tolerably early in June, it will, therefore, be necessary to commence heating it in some way or other, and as my worthy coadjutor, Mr. Errington, will be giving necessary directions in the way of cleaning the glass and other portions of the house, I will take it for granted, that a considerable amount of unoccupied space, with abundance of light, is at liberty to receive this production. But do not let me run into error in this matter, for it sometimes (yea, I may say, always) happens, that a Grape-house, at the first commencement of forcing operations, starts at a much lower temperature than suits the tropical origin of the Kidney-Bean; it would, therefore, be prudent not to commence too soon, unless there be the means of stowing them away in some other place heated to the temperature of 60°, or thereabouts, for directly the cotyledons are fairly out of the ground the plant begins to derive benefit, or injury, from the atmosphere it is placed in, so that it is often death to it when that atmosphere is not congenial to its welfare; yet the plan of growing French Beans in pots is, perhaps, one of the most simple operations in gardening,

when the principal points bearing on their culture is taken into consideration; and, beginning at the first one, a few words will suffice to explain one of the most common sources of disappointment.

Quality of Seed.—Although the dwarf Kidney-Bean has a large seed when compared with many other things producing a robust growth, yet it is, nevertheless, one which speedily ceases to be of service to the young plant which germinates from it; in this respect it forms a striking contrast to our cereals, especially wheat, which for a long time continues to derive nourishment and support from the seed kernel; whereas, the seed-kernel or cotyledons of the Kidney-Bean seems quickly to become useless in that respect, and as the plant is an annual of the tenderest kind, it need not be wondered at if it be liable to die off when forced into existence at an unusual period of the year. Great care is, therefore, required to save the young progeny, and one of the most important points is to have the seed good, so that a robust, healthy plant may be commenced with.

Treatment of the Plant while very young.—This is the most critical of all points, and in spite of the greatest care losses will now and then occur. Brought into existence at a time of year the least of all congenial to their well-being, and, as stated above, soon losing the uses of the parent seed, or kernel, it need not be wondered at if now and then plants die off, and sometimes whole pots or pans of them fall victims at once to "what can hardly be called disease," for it seems more like an ineffectual attempt to live than an attack of disease; for the plants die off sometimes wholesale, by decaying at the root, or rather the stem just above the surface of the ground. Dustings with lime, wood-ashes, or soot, will, in a measure, arrest the decay, but not entirely; while a too great abundance of water, an atmosphere too cold, or other causes, will have the effect of hastening the destruction of the plant, while the absence of sunshine will, probably, more than all together, tend to lessen their chances of living. The latter cause we have no means of preventing; but it may be aggravated by denying them the light they might have; therefore, by all means, let them be placed near the glass, and, as I have before said, let them only be very moderately supplied with water, and avoid subjecting them to cold draughts of air or any other harsh treatment.

Treatment after the Plants are a little advanced.—This should still be careful, as a delicate habit will not bear rough usage; but the danger of their dying off subsides when they are a little more advanced. At the same time, they become liable to the attacks of insects, which, of course, must be kept at bay, or rather kept away altogether; the plants will also want supports of some kind or other as they keep growing; but these things will easily present themselves to the cultivator.

In the above outline of their growth, I ought to have said, that the seed might be sown thickly in shallow pans, and but very sparingly covered over with earth; and when they have obtained their first rough leaf (which is their third one), they might be carefully transplanted from thence into these fruiting-pots, which with me is the kind called in the trade 12's; about three or four plants to a pot is sufficient, and if they become crowded, it is better to pull one or more up for the welfare of the others. A position near the glass must be afforded them, and they must be only sparingly watered for some time. A rather loamy soil, strong, yet not too adhesive, suits them best; too open, or light one, only producing vine and foliage to the exclusion of fruit. In potting, it is very good practice to place these rather deep in the pot at first, and afterwards to add soil as required. Liquid-manure will be wanted at a more advanced period of their growth; but of that I will say something hereafter.

J. ROBSON.

FEEDING POULTRY AFTER THEIR EXHIBITION.

THE following case, which involved a serious pecuniary loss, is so instructive, that, although the subject has been alluded to before in these pages, I offer no apology for inserting the account.

On the return of the birds from Birmingham, to the yard of a gentleman, who had been eminently successful, they were fed, owing to the stupid blunder of the poultry-man, with an unlimited supply of hard corn, chiefly Barley and Indian Corn; the result was, that a cock, which had been highly commended there, devoured so much, after the long fast, that the grain swelled, and he became crop-bound; the true nature of the ailment was unfortunately not discovered for several days, during which time, of course, the bird was in a state of absolute starvation; the operation was then performed, and the hard impacted mass removed with difficulty; but the animal was too far exhausted to rally, and died shortly after.

Let me impress on all poultry-keepers the absolute necessity of feeding birds after long journeys, or long fastings, with a moderate quantity of soft food, in the first instance; to be followed by a limited quantity of soaked or boiled grain, before they are allowed to return to the usual dietary. Had this been done here, the life of a most valuable bird would have been saved.

The plan I generally adopt, is to give a bird some bread soaked in water for its first meal after long abstinence, or, if the bird was much exhausted, I would soak the bread in milk, and the next morning, if sufficiently recovered, it has some soaked grain for its first meal; but should it be still suffering from the effects of fasting, I prefer to feed it on scalded meal, as affording a supply of nourishment without so great a call on the digestive organs.—W. B. TEGETMEIER.

RUSH OR REED COVERS FOR GARDEN FRAMES.

I HEARD that a gentleman near me had made some reed covers for his frames, which were thought to be very good, very warm, and very easily put on and off, and I went to see them; they were the first of that kind of make I had ever seen—I mean of rushes placed lengthwise, and covering the light with one length. I was so pleased with the new mats that I begged the gentleman to give me a note for THE COTTAGE GARDENER, saying how he made them, and the cost. He told me he took the hint from Mr. Robson's suggestion. All the straw mats which have been recommended in our books are made by placing the straw crosswise; but it is not nearly so good that way as if it were placed lengthwise, like these rushes or reeds, the wet gets in between every two ribs, as we call the crossed little bundles of straw.

Straw-thatched hurdles have been used, time out of mind, by the Horticultural Society, for the conservatory wall in their garden at Chiswick. The straw is thatched lengthwise on these hurdles, as on a building, but that way is not so convenient when the covers are moved off and on twice a-day, unless particular attention is paid to the make.

I had some very good and cheap straw coverings for Peach walls at Shrubland Park, but I almost forget now how we made them; the design I had explained to me by tracings on the peach border with walking sticks, by the Earl Spencer and Lord Charles Wellesley, both of whom I found to be enthusiastic gardeners, in the very midst of the shooting season. Mr. Judd, gardener to the Earl Spencer, at Althorpe, who reads THE COTTAGE GARDENER, would do us much service if he would give us a plan and directions for making these straw coverings; or, Mr. Fish, who lives nearer to him, might ask the favour. I had to send to Mr. Judd before I could finish mine, as part of the directions I received from the noble gardeners aforesaid went pop over both the covers—the wall and the game covers.

I had marked a text upon Highland coverings, the first or second I had ever seen; but I shall not dwell on it now, after so many good plans are before us, particularly these rush, or reed mats, which I consider the very best of all I

have seen; but there is one kind of thatch, which they use for barns and outhouses in the highest glens of the Highlands, which I am quite sure would prove superior to all that we have yet tried; and, fortunately, such covers can be had in many parts of this country. I went up a long way into the Highlands in 1837, and I saw a barn which was covered with this thatch in 1814, "the year the peace was proclaimed," and it was not a bad thatch then; it struck me at the time what an excellent material for frame covers. It was made of the stalks of the common fern, or brake, or "brakens," after the blades or leaves were chopped off; for this purpose the fern is pulled up in August; not cut by the surface of the ground, as when they *make hay of it*; fern made into hay, *without the stalks* makes excellent hay for sheep. By thus pulling, the stalks are got from three to six inches longer, the ends taken out of the ground are quite black, or should be so, and the literal translation of the Gaelic word for this kind of thatch is, "covering with black tails." The black tails are dried in the sun, just like hay, and when dry enough the leaves are cut off, and the stem may be from three to five feet long; they are placed on the roof with the black tail downwards, just like thatching with straw, and will last three times as long as straw thatching. Two lengths of very ordinary fern stalk would cover a skeleton frame, like that which is used by "an amateur" for the reeds.—D. BEATON.

The following is the letter referred to by Mr. Beaton:—

"THE Rush covers for frames, which you saw in my garden, were made in this way;—I got some odds and ends of long slips of deal from our carpenter, and nailed together a light frame of this shape;—



the exact size of the light to be protected. On this I laid rushes, which I obtained from Chertsey; I should call them bullrushes, they exceeded seven feet in length. They were placed on the frame thickly, and then fastened down on the frames by transverse sticks over the rushes, and exactly over the transverse bars of the skeleton frame. I tied them tightly down to each of those bars in four places. The rushes were thus kept securely in their places, and the frame effectually thatched. The ends of the rushes were cut off.

"It was my first essay in carpentering. A little boy and myself finished one in an hour-and-a-quarter. A more able workman would make two in that time. The great advantage seems to me to consist in the lightness and cheapness of the protection. Each bundle of rushes costs two shillings, and will make two-and-a-half covers of the size of any ordinary garden frames. The wood, nails, &c., cannot be more than sixpence each frame. Thus, for one shilling and sixpence, you have a neater and more desirable covering than a garden mat, and one much more capable of resisting frost. You, however, have seen them, and are better able to form opinion of their merits than I am.

"In any neighbourhood where these rushes are not to be obtained, long straw may be used instead. I made two covers with straw; they are heavier, and would, no doubt, keep out more frost, and would cost less; but they are not so sightly, and would retain the wet longer.

"I claim no merit, if any attaches to this plan, as I have only adopted a suggestion on the subject which appeared in a recent number of THE COTTAGE GARDENER.—AN AMATEUR."

TAR, AND CUCUMBERS, AND SALT, IN A TAN-PIT.

ONE correspondent inquired if it was safe to paint the back wall of a plant-house with gas-tar; another said he

was afraid to salt the worms in his tan for fear of the plants; and I had marked two texts, in my rise and progress, on these very subjects, therefore I can get out of these two without the trouble of putting them into a regular form. If Mr. Sinclair was here, and Mr. George Miln, who was once foreman in the forcing-department in the nursery where we all danced so many nights in the year, they could both help me to the story of the tar and Cucumbers at the said place; but no matter. A new gardener, from London, introduced a new way of growing Cucumbers, new frames, and a new way of painting them inside and out, and that was with tar; but what kind of tar I do not recollect; but you could smell it a mile off for a long time, and of all the disasters I have heard of in gardening, the result was the most disastrous. They were to have Cucumbers by the first of February; but the first one of that season was cut about Midsummer, after I know not how many "sowings" and "crops" were tried, burnt alive, and tried again and again in the tarred frames; the seed leaves were not hurt, but the moment the rough leaf came up it was scorched round the edges, and if the sun touched the glass the leaves would make tinder in a few hours. I often and often thought George Miln would go and drown himself, or set fire to the tar; but he was a good-natured man, and would not do what was wrong for all the world; but I venture to say, that if he were to see a tarred frame for Cucumbers at this distance of time he would be off to London.

About the worms and tan, I once got into the same kind of mess as our correspondent. I put salt and salt water over and among them till I killed every one of them, and their eggs as well; but I killed all the heat in the tan, and I might as well have got rid of both tan and worms without the salt, by turning out the whole, as I had to do at last; but the effects of the salt I did not and could not get rid of for two or three years. The bricks began to crumble away like so much brick-dust, and no paint, or wash, could stop the destruction till the pit was rendered useless. I dared not try a coat or two of tar, else that might have saved the bricks and hurt the kinds of plants I had as it did the Cucumbers.—D. BEATON.

ESSEX ASSOCIATION EXHIBITION OF POULTRY.

Held at Colchester, December 28th, 1854. Judges—Mr. Andrews, Dorchester. Mr. J. Bailey, 113, Mount-street, Grosvenor-square.

TEN GUINEA CUP FOR BEST GENERAL COLLECTION SHOWN BY ANY AMATEUR.—Mr. John Fairlie, Cheveley Park, Cambridgeshire.

FIVE GUINEA CUP FOR BEST GENERAL COLLECTION OF AN ESSEX OR SUFFOLK AMATEUR.—Miss Shaw, Rougham Rectory.

Class 1.—DORKING (Coloured).—More than one year old.—7. First prize, Mr. James Frost, Parham, Woodbridge. 21. Second prize, Mr. Edward Terry, Aylesbury, Bucks. 13. Third prize, Mr. William Fisher Hobbs, Boxted Lodge. 19. Fourth prize, Miss Shaw, Rougham Rectory. Highly Commended.—6. Mrs. Henry Fookes, Whitechurch, Dorset. 10. Rev. Philip Gurdon, Cranworthy Rectory. 22. Mr. G. B. Ward, Great Bentley. Commended.—1. Hon. Mrs. D. Astley, Melton Constable, Norfolk. 15. Rev. E. H. Kittoe, Chadwell Rectory, Essex.

Class 2.—DORKING (Coloured).—Chicken of 1854.—46. First prize, Captain Frank Howard Vyse, Horse Barracks, Windsor. 14. Second prize, Mrs. Henry Fookes, Whitechurch, Dorset. 4. Third prize, Mr. F. L. Astley, Burgh Hall, Norfolk. 19. Fourth prize, Rev. Philip Gurdon, Cranworthy Rectory. Highly Commended.—1. Mr. George C. Adkins, Edgbaston. 13. Mr. John Fairlie, Cheveley. 30. Rev. E. H. Kittoe, Chadwell Rectory, Essex. 40. Mr. George Round, Colchester. 44. Mr. Edward Terry, Aylesbury, Bucks. Commended.—12. Mr. Thomas B. Fairhead, Glazenwood, Braintree. 43. Miss Shaw, Rougham Rectory.

Class 3.—DORKING (White).—More than one year old.—1. First prize, Mr. W. G. K. Breavington, Vicarage Farm, Hounslow. 3. Second prize, Mr. Henry Lingwood, Needham Market.

Class 4.—DORKING (White).—Chicken of 1854.—1. First prize, Mr. Firman Fuller, March Cambs. 3. Second prize, Mr. Henry Lingwood, Needham Market.

Class 5.—DORKING.—Best Cock of any colour, shown separately.—7. First prize, Mr. William Fisher Hobbs, Boxted Lodge. Highly Commended.—10. Mr. William Fisher Hobbs, Boxted Lodge. 16. Mr. Edward Terry, Aylesbury, Bucks. 17. Mr. Henry Woodward, Stanway. Commended.—1. Hon. Mrs. D. Astley, Melton Constable, Norfolk. 13. Mr. Robert Loder, Crawley, Sussex.

Class 6.—DORKING.—Best Hen of any colour, shown separately.—9. First prize, Lady Margaret Macdonald, Woolmer Lodge. Commended.

—2. Mr. W. G. K. Breavington, Vicarage Farm, Hounslow. 3. Mr. J. K. Fowler, Prebendal Farm, Aylesbury. 6. Mr. William Fisher Hobbs, Boxted Lodge.

Class 7.—SPANISH.—More than one year old.—13. First prize, Miss Shaw, Rougham Rectory. 3. Second prize, Mr. George Botham, Wexham Court, Bucks. 7. Third prize, Mr. Thomas B. Fairhead, Glazenwood, Braintree. 9. Fourth prize, Lady Margaret Macdonald, Woolmer Lodge.

Class 8.—SPANISH.—Chicken of 1854.—11. First prize, Lady Margaret Macdonald, Woolmer Lodge. 1. Second prize, Mr. George C. Adkins, Edgbaston. 23. Third prize, Miss Shaw, Rougham Rectory. 20. Fourth prize, Captain J. G. Ramsden, Twickenham. Highly Commended.—5. Mr. George Botham, Wexham Court, Bucks. 13. Lady Margaret Macdonald, Woolmer Lodge. Commended.—8. Mr. J. K. Fowler, Prebendal Farm, Aylesbury. 14. Lady Margaret Macdonald, Woolmer Lodge. 25. Mr. Edward Terry, Aylesbury, Bucks.

Class 9.—SPANISH.—Best separate Cock.—8. First prize, Miss Shaw, Rougham Rectory.

Class 10.—SPANISH.—Best separate Hen.—4. First prize, Miss Shaw, Rougham Rectory.

Class 11.—SHANGHAE.—More than one year old.—13. First prize, Mr. Richard Postans, Shelly, Suffolk. 8. Second prize, Mr. Parkins Jones, Fulham, Middlesex.

Class 12.—SHANGHAE.—Chicken of 1854.—5. First prize, Miss Christy, Broomfield, Essex. 26. Second prize, Mr. Charles Punchard, Blunt's Hall, Haverhill.

Class 13.—SHANGHAE (Brown or Partridge).—4. First prize, Mr. Charles Punchard, Blunt's Hall, Haverhill. 1. Second prize, Mr. George C. Adkins, Edgbaston.

Class 14.—SHANGHAE (Brown or Partridge).—Chicken of 1854.—1. Second prize, Mr. John Fairlie, Cheveley.

Class 15.—SHANGHAE (White or Black).—More than one year old.—4. First prize, Mr. John Fairlie, Cheveley. 3. Second prize, Mr. John Fairlie, Cheveley.

Class 16.—SHANGHAE (White or Black).—Chicken of 1854.—28. First prize, Mr. George Read, Scole, Norfolk. 11. Second prize, Mr. Thomas B. Fairhead, Glazenwood, Braintree. Commended.—6.* Mr. J. Christy, junr., Boynton Hall.

Class 17.—SHANGHAE.—Best Cock of any colour.—10. First prize, Mr. Edward Terry, Aylesbury. 3. Second prize, Mr. John Fairlie, Cheveley.

Class 18.—SHANGHAE.—Best Hen of any colour.—17. First prize, Mr. J. F. Robinson, Hadleigh. Highly Commended.—9. Rev. Arthur Gilbert, Grimstone, Norfolk. 12. Mr. Parkins Jones, Fulham, Middlesex. Commended.—3. Mr. W. G. K. Breavington, Vicarage Farm, Hounslow.

Class 19.—BRAMAH POOTRA.—Birds of any age.—11. First prize, Mr. John Fairlie, Cheveley. 9. Second prize, Rev. Charles H. Crosse, New Square, Cambridge. Highly Commended.—3. Mr. George Botham, Wexham Court, Bucks. 4. Mr. W. G. K. Breavington, Vicarage Farm, Hounslow. 8. Mrs. Susan Clarke, Shrub Cottage, Hartley Row, Hants. 22. Mr. Charles Punchard, Blunt's Hall, Haverhill. Commended.—19. Mr. H. Peck, Haverhill, Suffolk.

Class 20.—MALAYS.—Birds of any age.—First prize—No merit. 3. Second prize, Mr. James Cropley, Great Shelford.

Class 21.—GAME (White and Pile).—Older than one year.—7. First prize, Mr. Henry Sheld, Taunton, Somerset. 3. Second prize, Mr. John Fairlie, Cheveley. Commended.—2. Mr. George Botham, Wexham Court, Bucks.

Class 22.—GAME (White and Pile).—Chicken of 1854.—2. First prize, Mr. N. G. Barthrupp, Creetingham Rectory. 5. Second prize, Mr. J. Monsey, Norwich.

Class 23.—GAME (Black-breasted Red).—Older than one year.—5. First prize, Lieut. S. Trevor Dickens, R.N., Stoke-by-Nayland. 19. Second prize, Mr. Robert Taylor, Colchester. Highly Commended.—6. Lieut. S. Trevor Dickens, R.N., Stoke-by-Nayland. 7. Lieut. S. Trevor Dickens, R.N., Stoke-by-Nayland. Commended.—8. Mr. John Fairlie, Cheveley. 9. Mr. John Fairlie, Cheveley.

Class 24.—GAME (Black-breasted Red).—Chicken of 1854.—16. First prize, Mr. Samuel Matthew, Stowmarket. 6. Second prize, Mr. George de Horne, Stanway Hall. Highly Commended.—8. Mr. Edward Farmer, Greet, Spark Brook, Worcester. 15. Mr. Samuel Matthew, Stowmarket. 19. Mr. Edward Muskett, Bury St. Edmund's. 28. Mr. Henry Woodward, Stanway.

Class 25.—GAME (Any other colour).—Old.—6. First prize, Mr. Samuel Matthew, Stowmarket. 5. Second prize, Mr. Samuel Matthew, Stowmarket.

Class 26.—GAME (Any other colour).—Chicken of 1854.—13. First prize, Mr. John Hicks Symonds, Stowmarket. 7. Second prize, Mr. James Monsey, Thorn Lane, Norwich. Commended.—2. Mrs. H. T. Frere, Burstou, Norfolk.

Class 27.—GAME.—Best separate Cock, any colour.—8. First prize, Mr. Samuel Ridley, Clayton. Commended.—1. Mr. George C. Adkins, Edgbaston.

Class 28.—GAME.—Best separate Hen, any colour.—6. First prize, Mr. James Monsey, Thorn Lane, Norwich. Highly Commended.—1. Mr. George Frederick Brown, Diss.

Class 29.—POLAND (Black, White Crests).—Old.—1. First prize, Mr. G. C. Adkins, Edgbaston.

Class 30.—POLAND (Black, White Crests).—Chicken.—No merit.

Class 31.—**POLAND (Golden).**—Old.—1. First prize, Mr. G. C. Adkins, Edgbaston.

Class 32.—**POLAND (Golden).**—Chicken.—2. First prize, Mrs. Henry Fookes, Whitechurch, Dorset.

Class 33.—**POLAND (Silver).**—Old.—1. First prize, Mr. George C. Adkins, Edgbaston. Highly Commended.—3. Mr. W. G. K. Breavington, Vicarage Farm, Hounslow.

Class 34.—**POLAND (Silver).**—Chicken.—1. First prize, Mr. George C. Adkins, Edgbaston. Highly Commended.—5. Mr. Parkins Jones, Fulham, Middlesex.

Class 35.—**HAMBUGH (Golden-pencilled).**—Old.—3. First prize, Mr. Thomas Parker Mew, West Cowes, Isle of Wight.

Class 36.—**HAMBUGH (Golden-pencilled).**—Chicken.—2. First prize, Mr. W. G. K. Breavington, Vicarage Farm, Hounslow.

Class 37.—**HAMBUGH (Golden-spangled).**—Old.—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 38.—**HAMBUGH (Golden-spangled).**—Chicken.—2. First prize, Rev. Thomas Lyon Fellowes, Beighton Rectory.

Class 39.—**HAMBUGH (Silver-pencilled).**—Old.—3. First prize, Mr. Thomas B. Fairhead, Glazenwood, Braintree.

Class 40.—**HAMBUGH (Silver-pencilled).**—Chicken.—13. First prize, Mr. William M. R. Haggard, Bradenham Hall, Norfolk. Highly Commended.—12. Mr. William M. R. Haggard, Bradenham Hall, Norfolk. 16. Rev. Herbert S. Hawkins, Henny Rectory, Sudbury. Commended.—15. Rev. Herbert S. Hawkins, Henny Rectory, Sudbury.

Class 41.—**HAMBURGH (Silver-spangled).**—Old.—1. First prize, Hon. Mrs. D. Astley, Melton Constable, Norfolk.

Class 42.—**HAMBURGH (Silver-spangled).**—Chicken.—6. First prize, Mr. Philip P. Cother, Salisbury, Wilts.

Class 43.—**HAMBUGH.**—Best separate Cock, any colour.—2. First prize, Mr. Edward P. Areher, Stowmarket. Highly Commended.—4. Mr. Thomas B. Fairhead, Glazenwood.

Class 44.—**HAMBUGH.**—Best separate Hen, any colour.—5. First prize, Mr. Thomas B. Fairhead, Glazenwood.

Class 45.—**OTHER DISTINCT BREEDS.**—10. First prize, Rev. Thomas Lyon Fellowes, Beighton Rectory. 11. Second prize, Mr. James Harding, Norwich. (Ptarmigan.)

Class 46.—**BANTAM (Gold-laced).**—13. First prize, Mr. Henry D. Palmer, Southtown, Great Yarmouth. 14. Second prize, Mr. Samuel Ridley, Clayton, Sussex.

Class 47.—**BANTAM (Silver-laced).**—5. First prize, Mr. John Fairlie, Cheveley. 6. Second prize, Mr. James Monsey, Thorn Lane, Norwich.

Class 48.—**BANTAM (White).**—7. First prize, Mr. Thomas Parker Mew, West Cowes, Isle of Wight. 8. Second prize, Mr. James Monsey, Thorn Lane, Norwich. Highly Commended.—2. Mr. William Cottis, Witham. 11. Mr. J. F. Robinson, Hadleigh Hall, Suffolk.

Class 49.—**BANTAM (Black).**—14. First prize, Mr. Samuel Ridley, Clayton. 12. Second prize, Mr. James Monsey, Thorn Lane, Norwich. Highly Commended.—8. Rev. Philip Gurdon, Cranworth Rectory. 13. Mr. James Monsey, Thorn Lane, Norwich.

Class 50.—**GUINEA FOWL.**—8. First prize, Mr. John R. Rodbard, Aldwick Court, Somerset. 2. Second prize, Mr. William Haggard, Bradenham Hall, Norfolk.

Class 51.—**PEA FOWL (Coloured).**—1. First prize, Mr. Richard Potans, Shelly, Suffolk.

Class 52.—**PEA FOWL (White).**—No entry.

Class 53.—**TURKEYS (Black).**—Old.—3. First prize, Miss Julia Milward, Newton St. Loc, Somerset. 1. Second prize, Mr. John Fairlie, Cheveley.

Class 54.—**TURKEYS (Black).**—Chicken of 1854.—4. First prize, Mr. Robert S. Howe, Palgrave, Suffolk. 1. Second prize, Mr. John Fairlie, Cheveley. Highly Commended.—2. Mr. J. K. Fowler, Prebendal Farm, Aylesbury. 5. Miss Julia Milward, Newton St. Loc, Somerset.

Class 55.—**TURKEYS (White).**—Any age.—1. First prize, Mr. John Fairlie, Cheveley. 2. Second prize, Mr. Wm. M. R. Haggard, Bradenham Hall, Norfolk.

Class 56.—**TURKEYS (Any other colour).**—Old.—2. First prize, Mr. John Fairlie, Cheveley. 1. Second prize, Mr. John Fairlie, Cheveley. Highly Commended.—4. Mr. Robert Halls, Colchester.

Class 57.—**TURKEYS (Any other colour).**—Chicken of 1854.—2. First prize, Mr. John Fairlie, Cheveley. 1. Second prize, Mr. John Fairlie, Cheveley.

Class 58.—**TURKEYS.**—Best separate Cock.—8. First prize, Mr. James Monsey, Thorn Lane, Norwich. Highly Commended.—1. Mr. Octavius Bawtree, Abberton Hall. 9. Mrs. Blair Warren, Horkesley Hall, Essex. 10. Mr. W. A. Warwick, Donyland Lodge, Essex.

Class 59.—**TURKEYS.**—Best separate Hen.—2. First prize, Mr. John Fairlie, Cheveley.

Class 60.—**SWANS.**—2. First prize, Mr. R. Latimer Dell, Earls Colne.

Class 61.—**CYGNETS.**—1. First prize, Mr. R. Latimer Dell, Earls Colne.

Class 62.—**GESE.**—10. First prize, Mr. Edward Terry, Aylesbury, Bucks. 4. Second prize, Mr. John Fairlie, Cheveley. 2. Third prize, Mr. W. G. K. Breavington, Vicarage Farm, Hounslow.

Class 63.—**GESE.**—Separate Gander.—2. First prize, Mr. John Fairlie, Cheveley.

Class 64.—**GESE.**—Separate Goosc.—3. First prize, Mr. James Monsey, Norwich.

Class 65.—**AYLESBURY DUCKS.**—12. First prize, Mr. J. K. Fowler, Prebendal Farm, Aylesbury. 17. Second prize, Mr. William Fisher Hobbs, Boxted Lodge. 16. Third prize, Mr. William Fisher Hobbs, Boxted Lodge. Highly Commended.—4. Mr. W. G. K. Breavington, Vicarage Farm, Hounslow. 18. Mr. William Fisher Hobbs, Boxted Lodge. 19. Mr. William Fisher Hobbs, Boxted Lodge. Commended.—11. Rev. Thomas Lyons Fellowes, Beighton Rectory. 22. Lady Margaret Macdonald, Woolmer Lodge. 27. Mr. Richard Postans, Shelly, Suffolk. 32. Mr. Edward Terry, Aylesbury, Bucks.

Class 66.—**ROUEN DUCKS.**—8. First prize, Mrs. Henry Fookes, Whitechurch, Dorset. 4. Second prize, Mr. W. G. K. Breavington, Vicarage Farm, Hounslow. 6. Third prize, Mr. John Fairlie, Cheveley. Highly Commended.—7. Rev. Thomas Lyons Fellowes, Beighton. 9. Mr. J. K. Fowler, Prebendal Farm, Aylesbury.

Class 67.—**DUCKS.**—Any other variety.—19. First prize, Mr. C. Punchard, Blunt's Hall. (Black East Indian.) 1. Second prize, Mr. S. T. Baker, Chelsea. Highly Commended.—12. Rev. E. H. Kittoe, Chadwell Rectory. (Buenos Ayres.) Commended.—6. Mr. W. G. K. Breavington, Hounslow. (Buenos Ayres.) 10. Mr. R. S. Howe, Palgrave.

Class 68A.—**PIGEONS (Carriers).**—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 68B.—**PIGEONS (Tumblers).**—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 68C.—**PIGEONS (Balds, Beards, and Mottled Tumblers).**—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 68E.—**PIGEONS (Owls).**—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 68F.—**PIGEONS (Nuns).**—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 68G.—**PIGEONS (Turbits).**—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 68H.—**PIGEONS (Archangels).**—1. First prize, Mr. George C. Adkins, Edgbaston.

Class 68I.—**PIGEONS (Jacobins).**—3. First prize, Mr. Frederick Watson, Woodbridge.

Class 68K.—**PIGEONS (Fantails).**—3. First prize, Mr. Edward Wood, Woodbridge.

Class 68L.—**PIGEONS (Trumpeters).**—2. First prize, Mr. Parkins Jones, Fulham.

Class 68M.—**PIGEONS (Barbs).**—2. First prize, Mr. S. T. Barker, Manor House, King's Road, Chelsea.

Class 68N.—**PIGEONS (Runts).**—1. First prize, Mr. George C. Adkins, Edgbaston. Commended.—3. Mr. S. T. Baker, Manor House, King's Road, Chelsea.

Class 68O.—**PIGEONS (Dragons).**—5. First prize, Mr. James George Yell, Chelmsford.

Class 68P.—**PIGEONS (Any new and distinct).**—5. First prize, Mr. S. T. Baker, Manor House, King's Road, Chelsea.

Class 69A.—**RABBITS.**—Largest Ears.—1. First prize, Mr. J. F. Chater, Haverhill.

Class 69B.—**RABBITS.**—Black and White.—1. First prize, Mr. E. Harris, Colchester.

Class 69C.—**RABBITS (Self-Colour).**—3. First prize, Mr. E. Harris, Colchester.

Class 69.—**RABBITS (Foreign).**—4. First prize, Mr. J. H. Blood, Witham.

KENDAL EXHIBITION OF POULTRY.

We gave a notice of this Exhibition at page 288, and we have since been furnished with the following list of prizes.

JUDGE.—T. B. Stead, Esq., Leeds.

Class 1.—**SPANISH.**—First prize, R. B. Parkinson, Kendal. Second and third prizes, G. Mashiter, Ulverstone.

Class 2.—**CHICKEN.**—First prize, G. C. Whitwell, Tolson Hall. Second prize, G. A. Gelderd, Esq., Aikrigg End. Third prize, R. B. Parkinson. Commended.—W. M. Pye, Quernmore School (two pens). R. B. Parkinson.

Class 3.—**DORKINGS (Coloured).**—First prize, T. Ullock, Esq., Bowness. Second prize, G. A. Gelderd, Esq. Third prize, W. W. Rutledge, Storth End, Stainton. Highly Commended.—T. Ullock, Esq. Commended.—J. Morton, Skelsmergh Hall.

Class 4.—**CHICKEN.**—First prize, T. Ullock, Esq. Second prize, G. A. Gelderd, Esq. Third prize, W. Bowness, Bowness. Highly Commended.—W. Ellison, jun., Low Sizergh. W. Whitwell, Esq., Tolson Hall.

Class 5.—**WHITE.**—First prize withheld. Second prize, W. Ellison, Esq., Sizergh Castle.

Class 6.—**CHICKEN.**—First prize, John Robinson, Orton Hall. Second prize, H. Sharp, Bradford.

Class 7.—**COCHIN-CHINA (Cinnamon and Buff).**—First prize, G. Gibson, Storth Cottage, Stainton. Second prize, W. Cannan, Bradford.

Class 8.—CHICKEN.—No first prize. Second prize, T. and E. Booth, Marsden, Burnley. Third prize, J. Bousfield, Esq., Broom Close, Kendal.

Class 9.—BROWN and PARTRIDGE.—No first prize. Second prize, W. Wanklyn, Esq., Green Bank, Bury.

Class 10.—CHICKEN.—No first prize. Second prize, H. Butler, Shelf, Halifax.

Class 11.—WHITE.—First prize, E. Calvert, Warwick Bridge. Second prize, Daniel Harrison, Esq., Singleton Park.

Class 12.—CHICKEN.—First prize, W. Cannan. Second prize, Samuel Taylor, Esq., Ishotholme.

Class 13.—BLACK.—None sent.

Class 14.—CHICKEN.—First prize, W. Wanklyn, Esq. Second prize, W. Cannan. Commended.—H. Butler.

Class 15.—MALAYS.—No first prize. Second prize, W. Cannan.

Class 16.—CHICKEN.—No entries.

Class 17.—GAME FOWL (White and Piles).—First prize, W. Wilkinson, Brigsteer. Second prize, W. Cannan.

Class 18.—CHICKEN.—First prize, J. Thackray, Hawkshead. Second prize, M. Ridgway, Dewsbury. Highly Commended.—F. Atkinson, Lord's Plain.

Class 19.—BLACK-BREASTED AND OTHER RENS.—First prize, R. Bateman, Kendal. Second prize, H. Beldon, Bradford. Commended.—R. Thompson, Heaves Farm. W. Cannan.

Class 20.—CHICKEN.—First prize, E. Wells, Kendal. Second prize, Hartley, Sluttard Marsden, Burnley. Commended.—R. Thompson. (Two pens.)

Class 21.—BEST OF ANY OTHER VARIETY.—First prize, F. Atkinson. Second prize, W. Cannan.

Class 22.—CHICKEN.—First prize, W. Cannan. Second prize, E. Wells.

Class 23.—HAMBURGH (Golden-pencilled).—First prize, W. Sharp. Second prize, W. Cannan.

Class 24.—CHICKEN.—First prize, G. A. Gelderd, Esq. Second prize, Daniel Harrison, Esq.

Class 25.—GOLDEN-SPANGLED.—First and second prizes, J. Conyers, Esq., Leeds.

Class 26.—CHICKEN.—First prize, W. W. Ruttlidge. Second prize, T. and E. Booth, Marsden. Commended.—F. Driver, Keighley. J. Robinson, Orton Hall, Orton.

Class 27.—SILVER-SPANGLED.—First prize, H. Liekbarrow, Kendal. Second prize, T. and E. Booth. Commended.—G. A. Gelderd, Esq.

Class 28.—CHICKEN.—First prize, S. Taylor, Esq. Second prize, H. Beldon. Commended.—Isaac Kitching.

Class 29.—SILVER-SPANGLED.—First prize, J. Conyers, Esq. Second prize, H. Beldon.

Class 30.—CHICKEN.—First prize, W. Cannan. Second prize, J. Conyers, Esq. Commended.—T. and E. Booth. E. Driver.

Class 31.—POLAND FOWL.—First prize, J. Conyers, Esq. Second prize, W. Cannan.

Class 32.—CHICKEN.—No prize awarded.

Class 33.—GOLDEN.—First prize, J. Conyers, Esq. Second prize, H. Beldon.

Class 34.—CHICKEN.—First prize, R. Barker, Bolton-le-Sands. Second prize, W. Cannan.

Class 35.—SILVER.—First prize, W. Cannan. Second prize, T. K. Atkinson, Esq., Carden Lodge.

Class 36.—CHICKEN.—First prize, W. Cannan. Second prize, M. Ridgway, Dewsbury.

Class 37.—BANTAMS (Gold-laced).—First prize, C. R. Titterton, Birmingham. Second prize, W. Wanklyn, Esq.

Class 38.—SILVER-LACED.—No first prize. Second prize, W. Cannan.

Class 39.—BLACK.—First prize, M. Ridgway. Second prize, W. Cannan.

Class 40.—ANY OTHER VARIETY.—First prize, J. Pickthall, Esq., Mint House. Second prize, T. Robinson.

Class 41.—ANY OTHER BREED.—First prize, J. Conyers, Esq. Second prize, W. Cannan.

Class 42.—CHICKEN.—First prize, D. Harrison. (Bramah Pootras.) Second prize, W. Dawson. (Bramah Pootras.)

Class 43.—SPANISH.—Prizes for Single Cocks of any age.—G. C. Whitwell, Tolson Hall. Commended.—W. M. Pye. G. A. Gelderd, Esq. R. B. Parkinson.

Class 44.—DORKING.—W. Bownass. Highly Commended.—W. Bownass. Commended.—T. Ullock, Esq.

Class 45.—COCHIN-CHINA.—G. A. Gelderd, Esq. Commended.—J. Bousfield, Esq.

Class 46.—GAME.—H. Rauthmell, Esq., Hutton. Commended.—T. and E. Booth. R. Thompson. J. Sisson, Kendal. J. Conyers. R. Bateman, Kendal.

Class 47.—GEESE.—First prize, W. Talbot, jun., Lane House. Second prize, D. Harrison, Esq. Commended.—J. Stamper, Penrith. W. Ellison, Esq., Sizergh Castle.

Class 48.—DUCKS (Aylesbury).—First prize, W. Whitwell, Esq., Tolton Hall. Second prize, G. A. Gelderd, Esq. Commended.—J. Waugh, Warwick Bridge. G. Banks, High Gale. G. Robinson.

Class 49.—ROUEN.—First prize, J. Conyers. Second prize, W. C. Strickland, Esq., Sizergh Castle.

Class 50.—ANY OTHER VARIETY.—First prize, J. Waugh. Second prize, J. Stamper, Penrith. Commended.—G. A. Gelderd, Esq. J. Bousfield, Esq.

Class 51.—TURKEYS.—First prize, J. Conyers, Esq. Second prize, D. Harrison, Esq.

Class 52.—CHICKEN.—First prize, Dr. Gill, Alston. Second prize, W. Ellison, Esq.

Class 53.—GUINEA FOWL.—First prize, J. Rookes, High Barn. Second prize, G. A. Gelderd, Esq.

Class 54.—PIGRONS (Carriers).—First prize, C. R. Titterton. Second prize, T. Robinson.

Class 55.—ALMOND TUMBLERS.—First prize, T. E. Atkinson, Bradleyfield. Second prize, J. Monkhouse, Kendal.

Class 56.—JACOBINS.—First prize, J. Monkhouse. Second prize, H. Beldon.

Class 57.—FANTAILS.—First prize, J. Monkhouse. Second prize, C. R. Titterton.

Class 58.—TRUMPETERS.—First prize, C. R. Titterton. Second prize, J. Monkhouse.

Class 59.—POUTERS.—First prize, C. R. Titterton. Second prize, R. Barker.

Class 60.—ANY OTHER BREED.—First prize, C. R. Titterton. Second prize, H. Beldon.

QUERIES AND ANSWERS.

GARDENING.

THE CHAIOTÉ.

"I beg to enclose you a sketch of a fruit presented to me under the name 'Chaioté,' described as an esculent fruited climber, and common in the Canaries, on the high lands; it has somewhat the appearance of the Gourd tribe, but is evidently a kind of Nut, or one-seeded fruit, as the shoot is now just breaking at the end opposite the stalk; it has a pale green, hard rind, covered with spines. If by this feeble description, and the aid of the sketch, you, or, perhaps, some of your correspondents, could tell me the botanical name, I should feel greatly obliged. I have a plant of *Dendrobium Nobile* and *Picardii* showing bloom. Is the temperature 50° to 60° sufficient? Will a plant of *D. calceolaria*, with bulbs eighteen inches long, bloom next year?—H. K., Peckham."

[Your plant is an annual, and a native of the West Indies, where it is common. It is the *Sechium edulis* of botanists, and the "Eatable Choko" or "Choko Vine" of the English residents in the West Indies. It belongs to the Natural Order of Gourds (Cucurbitaceæ). The fruit is about four inches long, shaped like the White Lily's flower-buds, five-furrowed, and covered with bristly hairs. Jacquin states that this plant is known in South America under the name of *Choko* and *Chaioté*. The fruit is green, and shining on the outside, but whitish and fleshy within, varying in size, and singular in structure, containing one seed each, which is sometimes an inch long, and placed at the very top of the fruit; when it is ripe it protrudes itself a little, and puts forth many fibres at its extremity. In many of the West Indies, the inhabitants put the fruit into soups or puddings, or boil it as a substitute for turnips or greens, in which state it is looked upon as wholesome and refreshing; but it is too insipid to be much liked. The fruit serves to fatten hogs in the mountains, and inland parts of Jamaica, where the plant is much cultivated. The natives of Cuba notice two varieties; that which is most common they call simply *Chaiote*; it is beset with harmless prickles, sometimes in great abundance, sometimes with very few, and is about four inches in length. The other, less frequent, called *Chaiote frances*, is generally destitute of prickles, and is about the size of a hen's egg].

CURING A SMOKY FLUE.—ARTIFICIAL HORNS TO FOWLS.

"About two months since, I had a brick flue erected in my greenhouse, intended to be used only in the case of frost. We have used it half-a-dozen times only; twice it

acted very well, and every other time smoke came through a thousand fissures in the mortar, and even in the bricks. One friend advises me to have the chimney raised three feet higher than it is; *this* I should like to avoid, as it will be an eyesore from the drawing-room windows; but if we can get rid of the smoke no other way, it must be done. Another advises me to have the sides of the flues painted in one or two coats of oil paint, which he thinks would fill the cracks without obstructing the heat, or being liable to blister off. Whatever you advise, I will have done.

"The Cock figured in your last number, with the horny appendages to his comb, probably was brought from Spain, or some of the Spanish dependencies. They are common enough, and little to be admired. It is entirely artificial, and the practice is attended with cruelty. I tell *you*, who are, I know, incapable of giving useless pain, that it is done by cutting off the spur of a young cock just when it begins to become horny, and binding it firmly to the comb of another, removing the skin from the part where the root of the spur rests. This I learned from a Spanish gentleman, who gave one to me.—CARRIG CATHOL."

[You cannot do better than have your *smoking flue* coated with Portland cement, taking care that a *very* large proportion of sand is mixed with the cement, or it will be liable to crack and fall off. We have received, from Mr. Tegetmeier, a similar statement to that you give relative to the grafting of a *horn upon the head of a fowl*, but we think the party who communicated the drawing is not likely to be deceived; nor are the horns, as depicted, at all like the spurs of a cockerel. Of the leaves of *Geraniums* you enclosed, No 1, is the *Carrot-leaved*, and No 2, the *Quercifolium major*, or Large Oak-leaved. It is the Royal Oak *Geranium* of some gardeners.]

CAMELLIA BUDS FALLING.

"The enclosed Camellia bud (as large as a large marble) is one of four that has fallen off in this way, and I should feel obliged if you could give me any reason for it. They all attain this size and then drop altogether.—VICTORIA."

[This frequently happens from the plants standing in a close house, where a sufficiency of air was not given, and, also, from one or more periods of neglecting to water the plant until it is too dry, when the centre or axis of the flower-bud is the first thing to suffer, and though the outside swells for a time, it ultimately falls.]

WARDIAN CASE OF FERNS.

"My question is a wide one; I wish to know, first, which of the British species of Ferns are best adapted for a closed case; secondly, what is the best soil for general purposes to put in the case; and thirdly, whether any looser matter (as stones, or rubbish), should be put at the bottom to act as drainage. Possibly you may know of some work which would give me information on all these points; which, if you could recommend, I should at once procure. My Wardian case is only a small one; eight inches in diameter, by eighteen inches in height.—FILLIX."

[Unless you are a good hand at growing Ferns *in the open air*, take our word for it, you will kill many of them before you learn their culture in a Wardian case. There is no ornamental piece of drawing-room furniture which we prefer before a Wardian case, when under the management of good gardeners; but there is not one in a thousand who can manage a case to our liking. We have seen a dozen of them in London, made up by the best gardeners in the world, and then were handed over to some one or other who soon made a regular Balaclava of them. Your case is only a good sized bell-glass, and will only grow one good plant of the Black Maiden Hair Fern (*Adiantum Capillus Veneris*), one of the prettiest of British Ferns, and the easiest of them all to grow in such a small space. If you can see our last volume or two, you will find all you want in Mr. Appleby's account of the more hardy Ferns.]

FORCING RHUBARB AND SEA-KALE.

[In answer to *E. Tanson*, we can say, that a communication will shortly appear in our columns applicable to his case; but we may say, in the meantime, that Rhubarb and Sea-kale may both be forced in a frame, only the latter must

be excluded from light, which the former need not. It is, therefore, better to have a frame for each, as light and air, to a limited extent, improves the Rhubarb, while it is fatal to the quality of the Sea-kale. There is not so much danger of overheating now as there was before Christmas; but it had better never exceed 75°; less will do.

In answer to the same correspondent's enquiry about Cucumber sowing, we reply, by all means sow some seeds immediately. An article in our columns (page 262) will assist you in some points; but in regard to the best kind for to sow, much depends on what you want the fruits for. If for showing purposes, viz., *Snow's Horticultural Prize*, *Mill's Jewess*, or some of the more lately advertized ones; but if you grow them for use, and want abundance of good useful fruit, *The Roman Emperor*, or *Sion House*, will prove more productive; and what is of much consequence, less liable to mishaps of many kinds.]

IMPROVING AN EXHAUSTED SOIL.

"Week after week affords the most convincing "proof possible" of the inexhaustible good-nature and willingness to afford information to us novices, exhibited by the gentlemen connected with your highly instructive work, that I am induced to lay my most unhappy and melancholy case before them, under the hope that they will lend me, an unfortunate mortal, a helping hand in my present difficulties.

"My garden is about fifty yards by twenty yards, and situated in the west part of this town, (Newcastle-upon-Tyne), at a level of about 250 feet above the level of the sea, gradually sloping S. W.; has old Sol the whole day long, i.e., when he is visible; the ground is sheltered by houses upon all sides; they are about 160 yards, on an average, from my garden, and do little harm. The soil is rather light, and as "duffy" as a coal-pit heap. The subsoil is yellow clay of a poor quality, intermixed with large pieces of freestone.

"In April of last year, I took my present garden, and, to my sorrow and cost, found that every particle of stuff was worked out of the soil; probably no manure had been put into it for two or three years, and, being very old, the soil was thoroughly exhausted, and, to improve matters, chock full of Chickweed (I hate the sight of it), Docks, Coltsfoot, Mint (common), Horse-raddish, and such like articles; these latter advantages I did not ascertain until some time elapsed. Well, to work I went; got three good loads of well-rotted horse-dung, and laid it upon a portion of the ground, and turned the soil over about three times before planting; about May I had, without exception, I really believe, the finest crops of Chickweed ever seen by man; it perfectly smothered everything, Cabbages excepted. The Dutch hoe was vigorously set to work night and morning, and kept at work all the summer to get the beauties down; the crops were all hoed up, and a precious time I had. The Chickweed I have now conquered to a great extent. The Mint and Coltsfoot have vanished; as immediately they showed above ground, up they came, and so perfectly bled them to death. But the Horse-raddish is my master; I have taken wheelbarrows full of roots up last summer and the summer before, and all out of a space five feet wide and fifteen feet long. I have followed the roots into the clay, but all no use; but vanish they must, as they are in my best flower-border. What can I do?

"At the back end of last year, and during the early spring of this, I set to work, and trenched about half my ground down to the clay (average of soil two-and-a-half feet), and laid on this portion about four loads of horse-manure. The rest is not trenched, but is thrown up in ridges, and crammed full of manure, as I have laid not less than ten loads of rotten dung over about two-thirds of my ground; still, I cannot grow things as I wish.

"For instance, my *Dahlias* were not of sufficient size, although first-rate in colour and form. This I attribute to want of strength in the soil, as on visiting the gardens of some of my friends (all first-rate florists) their soil appears, and is, very different to mine, and they tell me my soil wants strength. Now the rub is, how is this most desirable object to be obtained? I have thought, Mr. Editor, that were I to cover over the ridges where I intend my *Dahlias* next year to grow with a goodish sprinkling of clay and clayey-sand, that the frosts would mellow it, so that in spring, when

preparing the ground, the whole might be dug in. I am ambitious enough to wish to equal, aye, and surpass, if I can, others in producing fine, large, good blooms. To reach this point, I do not hesitate at any personal labour, nor reasonable expense, as my motto is, "Never despair;" and I am determined to have, if working can do it, a good garden. I intend to grow chiefly florists' flowers, such as about 100 Dahlias, French and African Marigolds, Hollyhocks, Asters, German Stocks, Pinks, &c.

"By-the-by, I intend, in the spring, to get two or three loads of burnt grass-roots, &c., for a top-dressing.

"I may mention that my case—i.e., exhausted soil—is a very common one here, and what will do for my garden will answer for fifty of my neighbours.—A NORTHUMBERIAN."

[You have beneath your feet the agent—the best agent—for improving your soil. We allude to the yellow clay of your subsoil. Trench your ground down to that clay, and with the bottom spit in trenching bring up two or three inches, not more, of that clay, and mix it thoroughly with the surface-soil. Repeat this annually, until you find the staple of your soil sufficiently tenacious. Old mortar, and plaster reduced to powder, will also improve your soil's staple. Your neighbours will tell you that that "yellow clay" is too "hungry" to do any good. Now, by "hungry" is meant—if it has any correct meaning at all—that it consumes, or allows to be consumed, very rapidly any manure added to it. It does so, because it requires the addition of light sandy soil and chalky matter to keep it open, and thus to allow the moisture and gases of the air to get to the roots of the crop, which would afford to that crop as much nourishment as it derives from manure. Your upper soil is, "hungry" and "duffy," which, we presume, means loose and dry, because it wants clay to keep it together, and thus prevent the too rapid escape of the ammoniacal and other nutritious gases and products of the decomposing manure. Thus it is no less true in gardening, that two barrens make a fertile soil, than it is in grammar, that two negatives make an affirmative.]

HISTORICAL NOTES ON THE INTRODUCTION OF VARIOUS PLANTS INTO THE AGRICULTURE AND HORTICULTURE OF TUSCANY: a summary of a work entitled *Cenni storici sulla introduzione di varie piante nell'agricoltura ed orticoltura Toscana*. By Dr. Antonio Targioni-Tozzetti. Florence, 1850. — (From the *Horticultural Society's Journal*.)

(Continued from page 271.)

In Tuscany, the varieties of figs cultivated are numerous, many of them due to the days of the Republic. Fra Agostino del Riccio, in his already-quoted manuscripts, gives a selection of thirty-one sorts cultivated in Tuscany in the middle of the sixteenth century, adding that there were many others which he had not included, not having seen them himself. Those of the Medici gardens represented in the drawings of Castello, comprise eighteen early and thirty-two late sorts, in all fifty; and Micheli in his manuscripts carries the number up to ninety-five.

Notwithstanding the softness of the wood, and the readiness with which the branches are killed down, the trunk of the fig-tree is remarkable for its longevity. Pliny tells us of an aged wild fig in the forum, which was in a dying state in his days, but which they dared not cut down on account of the tradition that under its shade the wolf had suckled Romulus and Remus; that another wild fig in the forum had arisen over the chasm into which Curtius had precipitated himself, and which was preserved in memory of that feat; and that a third similar tree, which dated from before the time of Saturn, was cut down in the year of Rome 260, to erect the building where the vestals were placed. These tales may, indeed, not be true in their details, but the trees they relate to must have been known to have been several centuries old.

Prof. Targioni alludes to the practice of caprification, or of the supposed artificial fecundation of cultivated figs by the caprifico or wild fig, and quotes several writers, ancient and modern, who describe the operation. He does not appear to be aware of the able memoir of Gasparini, giving a detailed history of the origin and extent of the practice,

and satisfactorily proving its inutility as well by practical experiment as by theoretical argument, and showing at the same time how we must account for the perseverance with which the inhabitants of certain localities have kept it up from the earliest ages on record to the present day.

Mulberries, of Asiatic origin, were well known to the ancients, who cultivated them for their fruit, either for eating or as medicinal. They are mentioned by Theophrastus and Dioscorides, and also by Athenæus and Galen, and, among the Romans, Virgil, Horace, Pliny, Columella, and Palladius speak of them as common and well known. All these writers are supposed to refer to the *Black Mulberry* only (*Morus nigra*), now but little valued and seldom to be met with in Italy, although at the first introduction of the silkworms it is supposed to have been exclusively made use of in raising them. It is even said to be indigenous to the Italian sea coasts as well as to Persia. We have, however, been unable to find any wild specimens in any of our herbaria, and modern botanists meet with it only in a cultivated state in East India, as in Europe. The only native station given with any confidence in modern floras is the chain of Caucasus and some adjoining mountains.

The *White Mulberry* (*Morus alba*), now spread over all parts of Europe and Asia where the silkworm is raised, and almost everywhere the only species cultivated for that purpose, is a native of Northern India and China. It is said to have been unknown to the ancients. A passage of Ovid, quoted by Prof. Targioni, alludes, indeed, to the white fruits of the mulberry, but this is supposed by Prof. Moretti, who devoted a great part of his scientific life to the mulberry, to be a mere poetical license. Another of Berytus, also quoted by Targioni, states the mulberry bears white fruits when grafted on the white poplar, but in our days this can only provoke a smile at its evident absurdity. Yet a variety of the white mulberry, said to be delicious eating, but unknown in Europe, is now abundant in Beloochistan, Afghanistan, and probably in Persia, and apparently of very ancient cultivation there. It is, therefore, by no means impossible that some knowledge of it may have reached such of the ancient writers as may have been in the East, or had communication with it.

However that may be, it appears certain that the introduction of the white mulberry into Italy is of a date long posterior to that of the silkworm. These valuable insects were imported into Sicily, in 1148, by King Ruggieri, after he had, in his wars with Manuel Comnenus, conquered Thebes, Athens, and Corinth. It is commonly said that the Lucchese learnt the art of raising them from the Sicilians, and introduced it into Florence, when, in 1315, they took refuge there from the sack of their own city. Pagnini has, however, proved that silk was produced in Florence in and previous to the year 1225, and from the histories and chronicles of Malespini, Villani, and Ammirato, it would appear that there were silk factories there before 1166. All this time the leaves used were those of the black mulberry, as clearly appears from a passage of Pier Crescenzo, who wrote about the year 1280. Several statutes of the fourteenth century relate to the plantation of the mulberry without anything to indicate which species they allude to, whilst all writers of the sixteenth century clearly distinguish the white silkworm mulberry from the black-fruited. It would appear, then, that in the course of the fifteenth century, the former had gradually, but entirely, superseded the latter. It is, indeed, commonly supposed that the cuttings were first brought into Tuscany from the Levant, by Francesco Buonvicini, in 1434, and that already in the following year, 1435, a law dated seventh of April encouraging its cultivation related to this new species.

The *Red Mulberry* (*Morus rubra*), a North American species, is to be found here and there in Italian gardens; it is of recent introduction and does not appear ever to have been planted for silkworms. The one so called which Father Agostino del Riccio says that Francis I. of Medicis had extensively sown in the Boboli Gardens, and in the islands of Cacine at Florence, is supposed to have been a red-fruited variety of *Morus alba*. Several other varieties of this species have also, in modern days, been brought from Eastern Asia or raised in European plantations, and sent forth as new and most valuable species under the names of *Morus latifolia*, *macrophylla* or *Morettiana*, *multicaulis*, *sinensis*, *philippinensis*, *japonica*, &c.

A long chapter is devoted by Prof. Targioni to the *Agrumi*, that is to the oranges, lemons, citrons, and others belonging to the genus *Citrus* of the family of *Aurantiaceæ*. They have long been objects of great interest to the Italians, and the subject of many valuable works, being extensively cultivated for profit wherever the climate will admit of it, and for ornament or curiosity in public or private gardens in the more northern parts of the Peninsula, where they still require protection in winter. They are all of Eastern origin, and mostly introduced into Europe in comparatively modern days, but of very ancient and general cultivation in Asia. The varieties known are very numerous and difficult to reduce accurately to their species, on the limits of which botanists are much divided in opinion. Those who have bestowed the most pains in the investigation of Indian botany, and in whose judgment we should place the most confidence, have come to the conclusion that the citron, the orange, the lemon, the lime, and their numerous varieties now in circulation, are all derived from one botanical species, *Citrus medica*, indigenous to, and still found wild in, the mountains of East India. Others, it is true, tell us that the citron, the orange, and the lime, are to be found as distinct types in different valleys, even in the wild states; but these observations do not appear to have been made with that accuracy and critical caution which would be necessary in the case of trees so long and so generally cultivated.

With regard to the *Shaddock* (*Citrus decumana*), it is almost universally admitted as a distinct species, although at present only known in a state of cultivation. It must be admitted also, that it appears to present more constant characters than most of the others in the pubescence of its young shoots, and in the size of its flowers, besides the differences in the fruit; but Dr. Buchanan Hamilton, who is of great authority on such matters, and some others, are inclined to believe that this also may have originated in the *Citrus medica*. This point requires much farther investigation, and a better knowledge of the floras of South-eastern Asia, before we can come to any plausible conclusion.

Prof. Targioni gives copious details of the introduction into Tuscany and other parts of Italy, of many of the varieties there cultivated, for which we must refer to the work itself. It may suffice, for our present purpose, to extract a few notes on some of the more important races or species according as they may be considered. Among them all the earliest known was the *citron*. It is not, however, that fruit nor any other citrus, according to Prof. Targioni, that we read of in the Bible under the name of *Hadar* as is asserted by some, nor yet is it anywhere alluded to by Homer. The first mention we have of it is in a comedy of Antiphanes, quoted by Athenæus, in which it is said that the seeds of the citron had then recently been sent by the King of Persia as a present to the Greeks. Theophrastus is the first who describes it; he tells us that the fruit was not eaten, but solely prized for its odour and as a means of keeping the moths off woollen clothing. Among the Romans we find an allusion to the citron in Virgil's *Georgics*, but it does not appear to have been then introduced into Italy, for Columella, long after Virgil's death, made no mention of it, and Pliny, in his paraphrase as it were of the passage of Theophrastus, adds that it had been endeavoured to transport plants of the citron which he calls *malus medica* or *malus assyria* into Italy, but without effect, as it would only grow in Media and Persia. Palladius, however, in the fifth century, gives many details of the modes of propagating and cultivating this tree, which he says he had carried on with success on his Sardinian and Neapolitan possessions. It was therefore, in all probability, in the course of the third or fourth centuries that the citron was introduced and established in Italy.

The mass of evidence collected by Prof. Targioni seems to show that *oranges* were first brought from India into Arabia in the ninth century, that they were unknown in Europe, or at any rate in Italy in the eleventh, but were shortly afterwards carried westward by the Moors. They were in cultivation at Seville towards the end of the twelfth century, and at Palermo in the thirteenth, and probably also in Italy, for it is said that St. Dominic planted an orange for the convent of S. Sabina in Rome, in the year 1200. In the course of the same thirteenth century, the crusaders found citrons, oranges, and lemons very abundant in Palestine; and, in the following fourteenth, both oranges

and lemons became common in several parts of Italy. It appears, however, that the original importation of lemons from India into Arabia and Syria occurred about a century later than that of oranges.

The shaddock is believed to have followed a different route in its migration into Europe. Most abundantly cultivated in, and possibly indigenous to, the south-eastern extremity of the Asiatic continent, it is said to have been carried from thence to the West Indies, and from Jamaica and Barbadoes to England early in the eighteenth century. It was, however, certainly previously known in Italy, for it is described and figured by Ferrari, in 1646, as having been sent from Genoa to the garden of Carlo Cadenas, near Naples. There is no record of its first introduction to Genoa, whether from the East or the West.

Innumerable varieties of citrons are cultivated at Florence, where they have ever been great favourites as objects of curiosity as much as for their flowers and fruits. Among them is a very singular one called *bizzarria*, raised by hybridising and cross-grafting, in which the same tree produces oranges, lemons, and citrons, often on the same branch, and sometimes combined into one fruit, a curious case analogous to that of the well-known hybrid by grafting between the *Cytisus laburnum* and *C. purpureus*.

(To be continued.)

HOW LONDON IS SUPPLIED WITH MEAT, POULTRY, VEGETABLES, AND MILK.

(Continued from page 291.)

The foreign supply last year of cattle, sheep, pigs, and calves, was more than a seventh of the entire number sent to London. The Daily Bill of Entries at the Custom House furnishes us with a valuable indication of the fields from which we have already received, and may, in future, expect to receive still further additions of what Englishmen greatly covet—good beef and mutton at a moderate price. The arrivals by steam in the port of London in 1853 were as follows:—

	Oxen.	Sheep.	Calves.	Pigs.	Total.
From Holland	40,538	172,730	24,280	9,370	246,918
„ Denmark	9,487	7,515	60	..	17,062
„ Hanseatic Towns . .	4,366	37,443	1	632	42,442
„ Belgium	449	12,006	1,244	..	13,699
„ France	105	224	135	129	593
„ Portugal	100	..	..	..	100
„ Spain	17	..	..	..	17
„ Russia	3	..	..	..	3
Total	55,065	229,918	25,720	10,131	320,834

Holland, Denmark, and the Hanseatic Towns, it will be seen, were the principal contributors. A more striking example of the influence of the legislation of one country in modifying the occupations of the people of another could not be cited, than the manner in which Sir Robert Peel's tariff revolutionized the character of Danish and Dutch farming. Before 1844, the pastures of the two countries, more especially the rich marshes of Holland, were almost exclusively devoted to dairy purposes: the abolition of the duty on live stock in that year quickly introduced a new state of things. The farmers began to breed stock, and consequently turnips and mangel-wurzel have been creeping over fields, where once the dairy-maid carried the milking-pail, as gradually as one landscape succeeds another in the Polytechnic dissolving views. We get now from both countries excellent beef, especially from Jutland, whose lowing herds used formerly to go to Hamburgh—and who has not heard of the famous Hambro' beef? We may expect in time to receive still finer meat from this quarter, for the Danes have been sedulously improving their breed, and agriculturists, who saw the beasts which were sent over to the last Baker-street show, admitted that they were in every respect equal to our own short-horns. It is gratifying to note how ready the world is to follow our lead in the matter of stock-breeding. Bulls are bought up at fabulous prices by foreigners, and especially by our cousins on the other side

of the Atlantic, for the purpose of raising the indigenous cattle to the British standard. An American, for instance, purchased last year, for £1000, the celebrated bull bred by Earl Ducie, though unfortunately the animal broke his neck on his passage out. Another noble specimen was secured, we have heard, for the same quarter, for £600.

A considerable proportion of the pork consumed in London,—a much larger proportion than people imagine,—is “town made,” or at least is the produce of the immediate suburbs. Shepherd’s Bush might perhaps be termed the pigsty of the metropolis; for here every house has its piggery, and the air is sonorous with the grunting porkers. Again, in those portions of the outskirts, such as Kensington, which are inhabited by Irish colonies, the Celtic population does not forget its old habits or companions, especially that all-important “jintleman who pays the rint.” The Cockney taste for pork must have greatly fallen off during the past century and a half, for last year there were sold in Smithfield only 24,287 pigs, against 250,000 which Stow tells us were disposed of in the same market in 1698; that is not a tenth of what were eaten when the population was only 550,000! With this and the still more remarkable exception of sheep, the arrivals at Smithfield have in some degree kept pace with the increase of the population. The supply of sheep and lambs has, during the last twenty years, stood nearly still; for in 1828 there were brought to market 1,412,032, and in 1849 but 1,417,000—or only an extra four thousand for the 500,000 mouths which have been added to the metropolis between these two periods. That London has of late years abjured mutton, as our immediate ancestors appear to have done pork, the evidence of our senses denies. How then are we to explain this stagnation in the Smithfield returns? By the fact that a new channel has been found in the rapid rise of Newgate market, the great receptacle of country-killed meat brought up to town by the railways. Those who remember the place forty years ago, state that there were not twenty salesmen, and now there are 200! This enormous development is due to steam, which bids fair to give Newgate, in the cold season at least, the lead over Smithfield. The new agent has more than quadrupled the area from which London draws its meat. Twenty years ago, eighty miles was the farthest distance from which carcases ever came; now the Great Northern and North-Western railways, during the winter months, bring hundreds of tons from as far north as Aberdeen, whilst some are fetched from Hamburg and Ostend. Country slaughtering will in time, we have little doubt, deliver the capital from the nuisances which grow out of this horrible trade. Aberdeen is in fact becoming little else than a London abattoir. The style in which the butchers of that place dress and pack the carcases leaves nothing to be desired, and in the course of the year mountains of beef, mutton, pork, and veal arrive the night after it is slaughtered in perfect condition. According to returns obligingly forwarded to us by the different Railway Companies, we find that the following was the weight of country-killed meat by the under-mentioned lines:

	Tons.
Eastern Counties	10,398
North-Western	4,602
Great Western	5,200
Great Northern	13,152*
South-Eastern	1,035
South-Western	2,000
Brighton and South Coast . .	100
	<hr/> 36,487

Thus no less than 36,487 tons of meat are annually “pitched” at Newgate and Leadenhall markets. As the Scotch boats convey about 700 tons more, we have at least 37,187 tons of country-killed meat brought into London by steam, and these immense contributions are totally independent of the amount slaughtered at Smithfield, which is estimated to average weekly 1000 oxen, 3000 sheep and lambs, and 400 calves and pigs. We have given the average supply, but on some occasions the quantity is enormously increased. The Eastern Counties line, during last Christmas week, deposited at Newgate about 1000 tons of meat; and

* This return contains some small proportion of game, the quantity of which is not stated.

the weight sent by other companies on the same day would be proportionately large. No less than forty waggons were waiting on one occasion to discharge their beef and mutton into the market. And what does our reader imagine may be the area in which nine-tenths of this meat are sold? Just two roods forty-five perches, having one earriage-entrance, which varies from fourteen to eighteen feet in width, and four foot-entrances, the widest of which is only sixteen feet six inches, and the narrowest five feet eight inches. No wonder that, as we are informed by more than one of the witnesses before the Smithfield Inquiry Commission, there is often not sufficient space to expose the meat for sale, and it becomes putrid in consequence. Though we have acquired the fame of being a practical people, it must be confessed that we conduct many of our every-day transactions in a blundering manner when we cannot provide commodious markets for perishable commodities, or even turn out an omnibus that can be mounted without an effort of agility and daring.—(*Quarterly Review.*)

(To be continued.)

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed “To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London.”

DRESSING ASPARAGUS-BENS (J. H.).—This ought to have been done two months ago. Draw off with a hoe about an inch in depth of the surface soil of each bed; put on about the same depth of thoroughly decayed dung; sprinkle over the dung some common salt, a quarter-of-a-pound to every square yard; return the earth, and then leave undisturbed until the spring.

WORMS IN TURF (Goddess).—The recipe for lime-water given in our number for January 2nd will answer for turf as well as for hark-heds.

SULPHUR-DRESSING FOR WALL-FRUIT (Idem).—This on out-door trees we should not apply until the middle of February.

ENQUIRIES relative to *Begonia Fushsioides*, *Jasminum gracile*, and *Rhynchospermum jasminoides*, will be found answered by Mr. Fish to-day.

FUNGUS ON GOLD FISH.—We shall be obliged by any one giving us some information in answer to the following:—“Will you be kind enough to state whether any remedy can be applied to remove a kind of fungus growing on some Gold Fish, which I have in a small pond? The disease attacks the head and eyes of the fish, and in the course of a short time kills them. If you are in possession of any means of cure, I shall feel greatly favoured.—T. E. H.”

FLOWER-GARDEN PLAN (Joseph).—You have disposed the colours in the plan sent us to our own taste entirely. But there is no accounting for taste, and we do not recollect to have ever seen two beds less to our fancy than No. 2 and 3 beds. Were it not for these two beds, and for not knowing whether or not the surrounding walk is rounded off at the four corners, as they ought to be, to suit the line of the circular bed, we would engrave the plan. The colour in 2 and 3 is right, but the plants are not the best—this wants a taller kind—say *Salvia patens*, pegged down, otherwise the great size of No. 1, and the height of the Roses, will completely drown the little blue exaggrations.

EXPENSES OF PREPARING FOR A ROOT-CROP (An Amateur Farmer).—Before replying at length to your communication, Mr. Rohson would like better to consult some “chalk soil” farmers; but your case is not a solitary one, as the labour and expense of a root-crop very often exceed the value of the produce; but as the ensuing crop is generally one of corn, but little labour and expense is incurred, and the produce being more valuable, usually covers all the expenses of the two years, and leaves a fair profit behind. This is Mr. R.’s opinion, but he will be giving it more at length shortly.

HORTICULTURAL SOCIETY’S GARDEN.—Young Ambition had better write to the Secretary, 20, Regent-street, London.

JACKSON’S PREPARATION FOR POTATOES.—J. B. H. will be obliged by any practical information relative to the results of employing this.

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WEEKLY CALENDAR.

D M	D W	JANUARY 23—29, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
23	Tu	<i>Dytiscus marginalis.</i>	30.089—30.028	50—36	S.	—	54 a 7	30 a 4	11 33	5	12 5	23
24	W	<i>Dytiscus circumflexus.</i>	29.743—29.576	51—24	S.W.	02	53	32	morn.	6	12 21	24
25	Th	CONVERSION OF ST. PAUL.	30.123—30.084	48—36	S.W.	06	51	34	0 52	3	12 35	25
26	F	<i>Stenus cicindeloides.</i>	30.536—30.331	50—26	S.W.	—	50	36	2 9	8	12 48	26
27	S	<i>Stenus biguttatus.</i>	30.487—30.267	46—42	S.W.	03	49	37	3 24	9	13 1	27
28	SUN	4 SUNDAY AFTER EPIPHANY.	30.172—30.095	49—29	S.W.	10	47	39	4 38	10	13 13	28
29	M.	<i>Bryaxis hæmatica.</i>	29.934—29.505	53—48	S.W.	10	46	41	5 43	11	13 23	29

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 44.3°, and 33°, respectively. The greatest heat, 59°, occurred on the 23rd, in 1834; and the lowest cold, 15° on the 25th, in 1827. During the period 108 days were fine, and on 88 rain fell.

IF our readers will turn to page 95 of our present volume, forming part of our number published on the 7th of November, they will find this paragraph from the pen of Mr. Beaton:

"We shall, very likely, have not much winter till after the middle of January, and then we may have six weeks of it as hard as we had in 1830; but, let us hope, not quite so much snow at the beginning of April as we had that season. Now, I challenge all the almanacs about my estimate of next winter, and having been a private Murphy about the fine weather in October, I think I have some claim to urge on plantings of all kinds, and to have it all finished right off-hand before the 15th of January, at the furthest; also, every open spot in the garden, field, and nursery, ought to be turned upside-down, and ridged, and all the wheeling and carting be put off till this great frost comes—if it will really come, as I expect it will, and just about that time."

Now, whether the fulfilment of this meteorological prophecy be completed or not, it certainly commands attention to Mr. Beaton's authority as a correct observer of the signs of the seasons, that the severe frost, continuing whilst we write this, commenced on the 15th, as he predicted.

ABOUT one hundred and fifty years ago, Rheed, in his *Hortus Malabaricus*, published an account of the *Kattu Kelangu*, having a thick root,—black on the outside, white within, insipid flavoured, but eaten by the natives of Cochin, of which place it is native. Such is the account we find in Ray's *Historia Plantarum*, under the name of *Battata sylvestris*. This we believe to be, or a closely-allied species of, the *Dioscorea battata*, now advertising as a probable substitute for the Potato. That it will become such a substitute, we venture to foretell never will happen. We have partaken of Yams in Bengal; we have partaken of them in Sumatra, close to the native place of the species above-mentioned,—and we found them, by general consent, too dry, too tasteless, too starch-like in the mouth, to please an English palate.

The *Dioscorea battata* is the Chinese Yam, known throughout that empire as *Tchou-ya*, or *Tchou*, with various other adjuncts; but it was sent to France, in 1853, from Shanghai, by M. Martigny. It proves to be hardy in the climate of Paris; and M. Decaisne justly describes its root as "bulky, abounding in

nutritious matter, quickly cooked—either by boiling or roasting—and then having no flavour but that of starch." It is proposed to call it popularly "the Yam Potato" (*Igname-battate*), and it is thus described:—

"Its stems are annual, but its roots, or more properly speaking rhizomes, are perennial, and directed downwards perpendicularly, sometimes to the depth of a yard, if the soil is loose enough to admit them. The haulm is about as thick as a goose quill, cylindrical, turning from right to left, and about two yards long, violet, with small whitish specks. When left to themselves the stems lie flat on the ground, and strike root very readily. The leaves are opposite, heart-shaped, and triangular, upon purple stalks. The 'roots' vary in length and thickness with the soil in which they grow. They may be usually compared to clubs, the blunt end of which is as large as the fist, but which tapers downwards till it is no larger than the finger. Their skin resembles in colour the well-known beverage coffee and milk, and is covered with numerous fibrous rootlets. Under the skin is a white, opaline, very friable, slightly milky cellular mass, filled with flour, which softens and dries in cooking." (*Gardeners' Chronicle*.)

The way to cultivate it is to throw the ground into high ridges, and to plant cuttings on the top of each ridge in April, about twelve inches apart. The cuttings soon produce trailing stems, and when these are six feet long, cuttings are made of them, each cutting having an eye, and being planted at a similar distance on ridges, as were the cuttings of the roots. The stems are to be kept pruned, or the roots would not be so large.

M. Pepin found that roots left in the ground all the winter, at Paris, were uninjured, and produced shoots between the 15th and 20th of April.

According to the only analysis which has been published of this Yam, it contains, in every 100 parts, 70.4 of water, and 18.3 of starch. Potatoes contain about 75 of water, and 15 of starch per cent, and the Jerusalem Artichoke, 77 of water, 3 of starch, and 1.4 of liquid sugar.

M. Decaisne cultivated this Yam last year near Paris, and he grew them with tall supports, as well as without. He found no difference in the produce, for those with ten feet supports averaged only eight ounces of root per plant; those with six feet supports, twelve ounces; and those with stems trailing on the ground, ten ounces.

Although we are convinced that the Chinese Yam will never supersede the Potato, yet we recommend it to be tried as its auxiliary. If it proves suitable to our climate, it will add to the variety of our culinary vegetable stores. It is, indeed, a store crop, for it is said to remain fit for use during full twelve months.

THE Prize offered by the Yorkshire Agricultural Society for the best Essay on "Fattening Poultry" has been awarded to Mr. W. B. Tegetmeier.

THE CAMELLIA.

So much has been said about this noble flower at one period or other, that it requires what is termed "pluck" to approach the subject. Still we must consider the propriety of addressing new readers, as well as of reminding, occasionally, our old friends.

Our Camellias here (Oulton Park), are at this time, January the 6th, exceedingly fine, the flowers never so large before, and we have had them very fine for years. We have the *C. Rossii* eighteen inches in circumference; the *Elegans*, seventeen and a-half inches; *Althæaflora*, fifteen inches; and even *Donckelaeri*, which is not usually a large flower, fifteen inches. The plants are covered with buds of enormous size, perhaps scarcely a shoot but is studded, and in another week or so we shall have hundreds out, to all appearance; the foliage, too, of the deepest glossy green. And to what is this attributable? Not to what is termed pot-room, certainly, for we are no great advocates for big pots for Camellias. It is to the use of turfy soil, to the almost constant use of liquid-manure, and to the preservation of, perhaps, an unusual amount of air-moisture. We also use a very considerable amount of water to the roots, perhaps more than most cultivators, but as the quantity to be used depends so much on the roots, the constitution of the soil, and the drainage, we must again refer to that part of the affair.

It must not be inferred, from these remarks, that we continue to use, unguardedly, so great an amount of air-moisture when they are in blossom, and in the dead of winter. We do use a little constantly, even then, but it is ever accompanied by some degree of ventilation.

The quantity and frequent application of liquid-manure, which Camellias in a healthy state, rather "pot bound," and full of bud, will enjoy, is amazing; they are a match for Roses, or, indeed, any other plant, in this respect. But we always use it perfectly clear and weak. I really cannot say with precision what the rate of guano per gallon is, but should imagine it about one ounce; this will appear a small quantity to some, but then, as before observed, we seldom use water alone, from the time the blossom-buds are as large as Peas, until they have done making wood. I have never found anything better in this way than good Peruvian. I have tried soot, dunghill-liquor, soap-suds, &c., but they are not alone rather more difficult of application, but not so certain in the result required. Soot, however, may be used, and with benefit, if necessary; and in that case, I should say that two parts soot to one of guano would be good. Soap-suds I have a decided objection to; they not only produce an unsightly appearance, but they are quite at variance with our fundamental principle of high culture, by partially closing the pores of the soil, for they always leave a scum or skin behind; otherwise, there is no doubt about their possessing manurial qualities. Soap-suds appear to me as fitter for manure-heaps, or to apply to growing crops just before a hoeing or other cultural appliance.

But in the use of very fibrous soil, as being so durable in texture, and less likely to derange the drainage, I place very much stress. I have been so particular as to this with mine, that after being chopped roughly I have riddled it, rejecting all the fine soil which came through the riddle, and after drying the lumps, have shaken them once more in the riddle; thus leaving a great amount of organic matter in a very porous condition. In the act of repotting, these lumps are crammed in tightly as the potting proceeds; but be it observed, they are in a dryish state, or the tight cramming could not be recommended.

I may here observe, that this porous character of material, together with the most secure drainage, have been found particularly requisite, as connected with the liquid-manure, the object of which is to sustain annually the greatest amount of the finest blossoms, with the noblest character of foliage. The pots or tubs should be so drained, as that no sediment can possibly insinuate itself amongst the drainage; and must be also durable in character, according to the size of the shift, inasmuch, as the larger the shift, the greater is the probability of the tree remaining in the pot or tub.

I have known several cases of such a derangement of drainage as would cause the water, when applied, to stand on the surface of the soil for half-an-hour after being applied, and unless speedy relief was given, the sure consequences always were, the whole plant becoming pale in the foliage, and accompanied by a kind of vegetable emaciation.

It is amusing to see the speedy and equal passing of moisture through the soil of plants potted on the principles here recommended, as compared with those in which the soil has become soured. The water, applied ever so copiously, disappears in a few seconds, and its mode of vanishing, like the famous dissolving views, is so stealthy, that you seem surprised at beholding naked soil, which was a moment before a sheet of water. To some this may seem making a great deal out of a small matter, and if the principle began and ended with the Camellia, I would confess to it; but I stay for a moment to observe, that so small an affair may point to great matters, as concerns the cultivation of the soil of our broad and fertile acres. Does it not point to the immense importance of organic matter in the soil; as also to the benefits derivable from high cultural processes as to the free and equal transmission of moisture?

But to return; let me remind our readers who desire to shine in winter Camellias, of the great importance of forcing them into growth the season previous to forcing them; although this, if properly carried out, puts them in a position to require little or no forcing. Hurrying them into growth causes such an off-hand development of the parts, such a speedy expenditure of the forces of the tree already stored up, that no after tendency exists for a second growth, to anomalous formations, or to barrenness. The growth completed by about the end of May, a long period remains for the proper formation of the blossom-bud, and I have always found that the steadier this process proceeds, the bolder and better-coloured will be the flower, and the more certain and easy the development of its parts.

During the blossoming period, no vapour should be permitted to condense on the blossoms; their purity and endurance would be much injured thereby. I have a tall tree of *C. Rossii*, which last year continued in blossom from the beginning of November until the end of February, or even longer. This shows how long the blossoms may be continued on one tree only. The same tree is now in full bloom, and has a score or more of what I must call monsters, in proportion, and I think that for size, most of them would be at least sixteen inches in circumference. I have a small fire night and

day, the houses freely ventilated constantly, day and night, and water used liberally, morning and evening, about the floors, &c.; but still, through the ventilation, not a drop rests on the blossoms. Let me again recommend those who do not well understand this invaluable winter flower, this bouquet favourite, to shape their practice in this manner. R. ERRINGTON.

PRESERVING AND PROPAGATING CARROTS AND SIMILAR-ROOTED PLANTS.

ABOUT this time of the year, or, indeed, any time in winter, if the snow or frost put us in-doors, I remember a job which we used to be put to, when I was a lad, but now you seldom see or hear a word about it. I allude to the dressing of Carrots and Parsnips, by cutting off a slice of the "quick" from each root, along with the entire top; after that is done they can never sprout again; but if the place is moist, or at all damp, both the Carrot and the Parsnip will make abundance of white roots. At the time I refer to, there was a notion among old gardeners that Carrots and Parsnips eat all the sweeter if they are allowed to "malt," and no more; that is, allowed to make these small roots an inch long, and then be dried off. When Barley is malted, it is allowed, or, rather encouraged, to sprout so far, and after drying a long time is much sweeter than Barley that is not malted. But if the Carrot and Parsnip are allowed to sprout by the top, they soon turn to a wilder taste, so to speak; to prevent this was the reason assigned for topping them to the quick. Now, whether there is really any foundation for these old notions, I cannot say from experience; but people do say that Parsnips, at least, ought to be well frosted before they are taken up; the frost is said to make them more mellow and sweeter. Whether this notion is new or old, does not matter; it is certainly erroneous. My own Parsnips are sweeter this winter than I ever remember them, and they had no frost to speak of; but they had malted before the new year, without being taken up. They ripened early, and the mild weather caused them to root vigorously, and I was obliged to take them up by the middle of January—to stop the process of malting—just at the right stage to suit my own taste. I also topped them, taking a thin slice of the quick so as to prevent the sprouting running away with the sweetness. Now, if everybody took the same precautions, and watched the rooting, or malting, of these useful "roots," so as to have them just to his or her own taste, and then keep them so long as they lasted, everybody would get to be fond of Parsnips, the most wholesome root in the garden. After topping mine, I let them lie out on the ground to dry, and till a slight frost put a stop to their rooting; after that, I put them up, and I mean to keep them as dry as possible, without being too dry—that is, sufficiently dry to keep them from rooting any more; but not so dry as that any part of them can shrink in the least. I do not grow Carrots, else I would try the same experiment with them; for I have a great respect for many of the old ways which are now little thought of; but, depend upon it, we have been going too fast, in many wrong things, ever since the last war; so fast, indeed, in some things, that if *Experience* dared to open her mouth, she was bull-and-mouthed out of countenance with go-a-head "deductions," which propagated faster than you could write your own name. This brings us to propagation, for which we started; and what I was going to ask is this—Has any one tried to propagate good or superior varieties of the Carrot or the Parsnip from sets, like a Potato? And as the new Yam Potato must be propagated *from the root*, it does not seem, by all accounts, to have eyes all over it like the

Potatoes, but only at the top, just as the Parsnip and Carrot; and they say, if you only cut off the top part, or growing point, and a little of the root with it, that is all that is necessary for "seed," or another crop, something in the way we manage the Horseradish, but not to be planted so deep. If you buy a dish of Sea-kale in Covent Garden, you will have root enough with each head to make a good plant for a new bed; but so much root is not at all necessary, only it is the fashion to have it so in London, where, if the Kale is not sold as fast as they send it in, the couple of inches of the root, or root-stock, will keep it in suction till all is sold off next week.

The old way of making new beds of Sea-kale with "sets," or pieces of the roots, is now given up, or ought to be, because seedlings do so much better, and in quicker time. It may be the same with Carrots and Parsnips, but still we have no experience to prove that the case is so. There is only one variety of Sea-kale, and then there is nothing gained by keeping it "true" by root-cuttings; but every bed of Carrots and Parsnips, even if from the purest and best-selected seeds, produces more varieties than many of us are aware of, and it strikes me that the reason why both are much better *in kind*, is that we rely so much on the seed; if we were to propagate the largest Carrot, the sweetest, or the shortest, or longest of the season, from top-sets, and the same with Parsnips, there can be no doubt about a sudden improvement in both, provided these roots are capable of being reared profitably by sets, or as much so as they are from seeds; that point ought to be ascertained at once. I shall try some of my best Parsnips very soon, and put in one row of sets by the side of another row from seeds, and I shall taste, try, and know the difference, in one season, or else lose a whole row by the experiment. I shall cut off one full inch from the top with the leaves, or where the leaves come from. I have done so already; but when I plant, about the middle of February, I shall divide some of my top-sets into halves, and some into quarters, and note the difference. I mean to open a drill for these sets about the same depth as for early Peas, to put in wood and coal-ashes under the sets, and some all round them, with no more earth at first than will just cover the crowns; when the leaves are five or six inches long, I shall fill one-half the row level, and the other half will be left hollow all the season; as, perhaps, the Parsnip does not do so well if much covered over the crown—at least, that is the prevailing idea; but we shall see. Did any of my readers ever hear of a Parsnip ten feet long? I once heard about a longer one, from a spirited young Irishman, who wrought with me in Edinburgh. The story ran thus:—His father was a farmer, who burned lime from a chalk-pit; but the *Peelers* ruined him. Finding himself going down, he gave up the lime-kiln, and filled it from a sandy bank, such as the Experimental Garden in Edinburgh lies on; over this he sowed his last crop of Parsnips in November, and next autumn some of the "fruit," or Parsnips, reached down to the very bottom of the lime-kiln, but I forget the depth; however, they had to pull down the kiln before they could take the crop. So you see we have still a great deal to learn about "common things." Who knows but November is the best time to sow Parsnips, after all? Perhaps it should be put in after the Wheat in October. All I can say on the subject is, that frost never hurts the seedlings, as I have often noticed; but perhaps part of the crop would go to seed if sown in the autumn. But all this we have to learn yet from experience, if no one, who has already tried the plan, will come forward and tell us.

Carrots will graft on Carrots, and Parsnips on Parsnips; Dahlias on self, and ditto the Pæony; but nothing now need be expected from that kind of propagation,

unless one managed the grafted parts so as to cause a tumour to grow between the edges of the stock and scion; if that was effected, the tumour, or swelling, might, indeed, put forth a new growth of its own, which *might* partake of the two natures of the parents from which the tumour originated. This new kind of growth was considered heresy in high quarters for the last four years, or since Knight and Dutrochet "agreed" that wood was made like dip candles; but now a clearer insight is got into the workings of nature in natural growths, and the doctrine of forced unnatural growth, like the said tumour, is all but recognised; and the first man who proves the soundness of this doctrine may make his fortune by it; as has been done by hybridising before the world knew much about it.

There are many plants, however, on which it is useless to spend time in trying experiments of this kind—the *Dahlia* and *Pæony* for instance; if we take their blind tubers, graft them with different sorts of their respective kinds, leaving open slits on one side of the grafts to be filled with tumour-like growth, such growth will never push an eye; but if we had two kinds of Horse-raddish, and were to graft their roots together, leaving a cavity on one side to be filled up from new growths from both side of the cavity, that new growth or tumour would make eyes or buds in abundance if it was *forced* to do so. The way to force or compel it to do so would be by peeling the rind from the graft and stock parts, so as to leave no means of pushing a new shoot from the tumour. Different plants have different ways of pushing from this or that part of the stem or root, and different means must be applied to stop such growths for this experiment. But whether I live to see it, or not, I am persuaded that means, founded on this plan, if not principle, will be found out, by which a *new* plant may be made from two old ones, as sure as by cross-breeding. D. BEATON.

WINDOW GARDENING.

"FLORA would be obliged by being informed what flowers she must cultivate, and the treatment they will require, so that she may have a constant succession of choice, that is to say, not very common, flowering plants, in her window throughout the year. There is a small greenhouse attached, which might be made useful, if necessary. A variety of about six every month is what she wishes."

If the plants are kept small enough, there is hardly any plant that will grow well in a greenhouse but will also flourish for a short time in the window. All those with small foliage, such as the *Heaths*, suffer most, especially in the winter and early spring months, because the air is generally too dry, and not changed often enough. In all rooms in summer, where air is rather freely given, a small plant is nearly as much at home in a window as in a greenhouse, more especially if the plants are turned round, or half round, every other day.

Simple as the wishes of "Flora" are, it is not easy to comply with them, and make them generally interesting; and, therefore, to suit those who may not have the same conveniences, I will not confine myself to the six plants for every month. It is necessary, also, to remark, that many of these plants will bloom many months.

JANUARY.

Camellia, double white; *Bealii*, *Donkarii*; *Daphne odora rubra*; *Daphne odora*; *Coronilla glauca variegata*. Add to these, *Cyclamens*, *Neapolitan* and *Tree Violets*, *Chinese Primroses*, *Musk*, *Mignonette*, *Oak-leaved Geraniums*, *Sweet-scented ditto*, as *Prince of Orange*, *Citriodora*, merely for the scent, *Cinerarias*, &c.

FEBRUARY.

Camellia sinbiata; *Camellia Chandlerii*; *Cytisus Attleana* (beautiful, low-growing, yellow-flowering kind); *Daphne odora*; *Diosma ericoides*; *Rose l'abvier*, or other *China*, or miniature *Roses*. Add to the additional list for last month, *Grand Monarch*, and *Paper-white Narcissus*, and single and double *Van Thol Tulips*, and a few of the earliest *Hyacinths*.

MARCH.

Cytisus proliferus; *Pittosporum Tobira*; *Tea-scented Rose*; *Crimson China Rose*; *Correa pulchella*; *Myrtus communis*. In this month a fine show may be made with *Hyacinths*, *Narcissus*, and *Tulips* alone. Of *Narcissus*, among the best, will be *States General*, *Soleil d'Orr*, and double *Roman*. Of *Tulips*—*Tournesol*, double *Yellow*, *Rex rubrorum*, and *Royal Standard*, will be very attractive. *Chinese Primroses* will also be very good during the month, and we have seen a window in March exceedingly gay, from *Cinerarias* alone, that had been wintered and grown in a cool greenhouse. Small pots of the *Tree Violet* will also still send a sweet perfume into the room. If the *Camellias* have been kept very cool in the greenhouse, some plants from eighteen inches in height will be found suitable for the window. *Chinese Roses*, and *Bourbon Roses*, and *Tea Roses*, pruned early in autumn, and kept slowly growing in winter in the greenhouse.

APRIL.

Sprengelia incarnata; *Polygala oppositifolia*; *Daviesia lilacina*; *Azalea indica alba*; *Azalea Magnificent*; *Azalea Perryana*. Of course these *Azaleas* must be small, compact plants. *Violets*, *Primroses*, &c., will now be going off. The *Narcissus Bulbocodium*, allowed to come almost naturally, would make a fine yellow mass in a window. *Lachenalia tricolor*, and others of the same genus, brought slowly on in a greenhouse, would now look very gay. *Tea* and *China Roses*, in five or six-inch pots, with a few strongish shoots, terminated with bunches of flowers, look very nice. This month and the next, a fine show may be made with *Cinerarias*, sown last autumn.

MAY.

Genista Canariensis; *Gardenia latifolia*; *Pultenæa stricta*; *Azalea lateritia*; *Azalea Gledstanesii*; *Azalea variegata*; *Gardenia radicans*. In addition to things previously mentioned, a fine show could be made this month, and at least part of the next, with herbaceous *Calceolarias* alone. Shrubby ones, such as *Caies' Yellow*, *Crimson King*, *Sultan*, &c., make fine pot-plants in the spring and autumn. It is difficult keeping them in pots in the heat of summer.

JUNE.

Swainsonia Galegifolia; *Acacia grandis*; *Nerium oleander splendens*; *Cactus speciosa*; *Cactus Ackermanii*; *Cactus Jenkinsonii*. Groups of florist and fancy *Pelargoniums* are quite sufficient to render any window attractive during this month.

JULY.

Chironia floribunda; *Cassia corymbosa*; *Eutaxia myrtifolia*; *Sutherlandia frutescens*; *Cactus speciosissimus*; *Correa speciosa*. See what is said above of *Pelargoniums*. A row of good *Balsams* would now make a fine display; and so would *Cockscombs*, where there is the assistance of a hotbed. This month and the two following are the best of the year for *Fuchsias* blooming freely.

AUGUST.

Lightfootia subulata; *Chrysocoma ciliaris*; *Struthiola tomentosa*; *Psoralea divaricata*; *Otaheite Orange*;

Chironia linoides; *Jasminum azoricum*. We mention these; but, grow them how you will, they would make a poor show in a large window, beside such *Fuchsias* as *Banks' Glory*, *Voltigeur*, and *Dr. Lindley*—among the darks; and *England's Glory*, *Duchess of Lancaster*, and *Prince Arthur*—among the whites; and all cheap enough; and for older and younger plants, such a tribe may adorn a window from the middle of June to the middle of October. *Achimenes* will also do.

SEPTEMBER.

Salvia splendens; *Begonia Evansiana*; *Plumbago Capensis*; *Lilium rubrum*; *Lilium speciosum*; *Gladiolus Gandavensis*. The late-flowering *Gladioli* would make a fine show in a window, in this and part of the following month, such as *Pseittacinus*, *Natalensis*, &c., while *Ramosus*, *Formosissimus*, *Bolvillii*, &c., would bloom in pots, in June, July, and August. Scarlet *Geraniums*, florist and fancy *Pelargoniums*, struck, or stubbed back in spring, and stopped in July, will make nice flowering plants for this month, and so will *Fuchsias*, propagated in April.

OCTOBER.

The *Geraniums* alluded to above; young *Fuchsias*; *Salvia fulgens*, and shrubby *Calceolarias* of various kinds, along with *Gladioli*, will make a good show this month. Tea *Roses*, kept in rather a shady place, will also be useful. The *Pompone Chrysanthemum*, named *Hendersonii*, will be fit for the window by the end of the month.

NOVEMBER.

Fuchsia serratifolia; *Fuchsia cordifolia*; *Coronilla glauca*; *Myoporum parvifolium*; *Epacris impressa*; double Chinese *Primroso*. For this month, and the greater part of the next, nothing can exceed in beauty the *Pompone Chrysanthemums*. Look back to page 146, and you will find a list of the very best, from Mr. Beaton.

DECEMBER.

Leonotus Leonorus, almost too coarse for a window; Chinese *Primroses*; *Watsonia corymbosa*; *Daphne odora*; *Uniquo Pelargonium*; Scarlet *Geraniums*; *Cinerarias* coming in; *Epiphyllum truncatum*, if greenhouse at all comfortable; *Mignonette*, *Violets*, and *Camellias* bursting their buds.

From the above, many will be able to select according to their conveniences; and though going over beaten ground, I will, to please "Flora," give a running commentary on the culture necessary.

Azalea.—Grow entirely in heath-soil. Give them an average of 40° at night, in winter; do not let them get dry; increase the water as the buds swell, and give plenty when in bloom; remove every trace of bloom when faded; place the plants in a close place in the greenhouse, and sprinkle overhead, to encourage growth; when the young shoots are an inch in length, give more air, and full sunshine to set the flower-buds; potting will not be needed often.

Acacia.—I forgot to mention the golden-flowered, dark-leaved *Armata*. The culture is simple. Loam and heath-soil, a little pruning after blooming, growing in greenhouse, and placing out-of-doors in August and September.

Coronilla, *Pittosporum*, *Swainsonia*, &c., all the greenhouse plants mentioned, may be treated in much the same way; peat and loam to grow them in; attention to the rules for watering often, and lately given; a pruning according to the nature of the plant as soon as flowering is over; a keeping closish, if possible, for a short time afterwards, and sprinkling the top frequently to cause free growth, in preference to too great delugings at the roots, and then more air and exposure to sun to

harden the wood made. Almost all the kinds mentioned are such as this general treatment will suit; and if so treated, they will come into bloom nearly at the times indicated, though the course of culture, and the period at which these operations are performed, will change and regulate the time of blooming. For instance, here is a plant very much pot-bound; it receives a slight pruning after flowering, and when the young growth is half-an-inch in length, it gets a larger pot, and being kept closish, and a little shaded for a few days, it never feels the change, and will blow quite as soon, and better than in the old pot. But there is another exactly similar, but it gets no fresh pot. By-and-by, perhaps two or three months afterwards, the owner does not like its appearance, and resolves on giving it more feeding ground, just on the same principle as he takes up the hurdles and gives a fresh piece of pasture to his calves in the meadow, and the consequence is, that if he gives the plant increased luxuriance, it is often at the expense of throwing the flowering period much later than that of the other plant, and, in many cases, rendering the blooms for that season very scanty. As a general rule to obtain variety and neatness, and as much bloom as possible in little space,—plants intended for windows should be kept in small pots.

Daphnes.—These beauties for a window should be treated much the same as an *Azalea* or *Camellia*; get a start to grow after blooming, and after the wood "is made," and getting a little firm, like the *Camellia*, they will be much benefited by full exposure to the sun out-of-doors in the end of July, August, and September. The old *odora* is the easiest to manage. The *rubra* is generally grafted on it, or the common *Spurge Daphne*.

Cyclamens.—The treatment has been often given—The great things are, to give them a sufficient quantity of water, when growing, and just as much as will keep them dryish, but not dry, when in a dormant state. After flowering, and after May, they will be better plunged in a sunny spot out-of-doors than in a house. Nothing is better suited for a window.

Bulbs.—Those mentioned, such as *Narcissus* and *Hyacinthis*, &c., should be potted as soon as possible in November. The *Hyacinthis* singly in four-inch pots; the *Narcissus* in five or six-inch pots; and the *Tulips*, *Jonquils*, &c., three or four in a five inch-pot. These should be covered over with ashes out-of-doors, or kept in the dark in a warm cellar, or in a cupboard, not far from a fire. The covering over them of a few inches will keep them damp enough, without watering; and the earth will soon be filled with roots. When the tops begin to grow, remove them to the warm end of the greenhouse. If the greenhouse is near the dwelling-room, the flowering will be hastened if the pots were moved to the mantle-shelf at night, to raise the flower-stems by the greater heat. The same process would be advisable for getting the flowers early, with nothing but a window for growing and display.

Balsams.—These may be obtained in good order with the assistance of either greenhouse or window, by deferring sowing until towards the end of April; and being provided with a square of glass to put over the seed-pot.

Calceolarias.—Shrubby kinds of these, from cuttings struck in October, will flower nicely in pots during the spring months. Old plants kept over the winter will bloom earlier and more massive. Plants struck in April and May, frequently stopped during the summer, and kept in a cool, rather shady place until October, will bloom either in greenhouse or window in the early winter months. I can hold out no great inducement to sow seeds of herbaceous kinds in spring, as the weather would be getting too hot for them, when they were getting to their best. By sowing in September, nice, little, healthy flowering plants will be obtained in April, May, and June. I have frequently mentioned how small the seed is; how

carefully it should be sown; the pot covered with a square of glass, and then set in a cool, shady place while the plants are up, when, as soon as they can be handled, they must be pricked off, or there will be damping, to a certainty. The herbaceous kinds will not bloom continuously like the shrubby ones. The reason why the latter do so well when planted out in summer, and so poorly in pots, is, that in the former case the roots are kept cooler and moister.

Cinerarias.—By sowing these at intervals, from June to October, you may have flowering plants from November to July. Lists of the best kinds have lately been given. For good sorts, to blow early in winter, suckers should be taken off, or plants divided in August; successioned ones in September and October; and bits slipped off in January, February, and March, will keep plants on to July. If kept in 5-inch pots or so, there is a certainty that the flower-stems will soon appear. Like the *Calceolaria*, it is easily injured by frost; but that being secured against, it delights in a lewish, moist temperature. In winter, an average of 40° at night is quite sufficient. Whenever it gets a high temperature hosts of insects assail it. In rooms, its chief safety consists in frequent sponging and damping of the leaves, to neutralise the dryness of the atmosphere.

Chinese Primroses.—Sow in April, May, and June, and you may have plants blowing in 4-inch pots from November to May. The great thing in winter is to water so carefully as to keep the collar of the plants dry, or it is likely to gangrene and rot off. The seed-pot should be covered with a square of glass, and the plants pricked off as soon as they get three or four small leaves. The double Chinese Primrose is propagated by slipping off or dividing a plant into pieces, and inserting them as cuttings in a pot, and plunging it in a hot-bed, as for Cucumbers. It would want a good warm place in the greenhouse in summer, and every flower-stem nipped out as it appeared; then it would be a nice window-plant in November and December.

Cactus.—The treatment has often been given. Water freely when in bloom, and pretty freely afterwards while growth is making. Get them to a sunny place as soon in the end of August as possible, and by the middle of September curtail water, and keep almost dust-dry during winter. As the *Truncatus* flowers so nicely in the winter months, it must be kept growing after it has done flowering; be got into as sunny a spot in the house as possible in spring; get a warm spot out-of-doors in July; keep water from it, without allowing it to shrivel in September and the first part of October; and when housed, and a little water given, it will begin to blow about the end of November. For summer display in windows, the various coloured *Mesembryanthemums* are very beautiful, and cost little trouble.

Chrysanthemums.—These have very lately been alluded to. *Geraniums* have also received due attention. *Fuchsias* ditto, and will be presently alluded to. *Gladioli*, the early summer-flowering kinds, should be potted rather deeply in autumn; the late-flowering kinds in spring. Half-a-dozen of small-rooted kinds may be placed in a six-inch pot, and from one to three of the large ones.

Lilium speciosum, &c.—Keep in rather a dry state in winter, in a cellar, or anywhere free from much frost. In spring, repot or top-dress. Keep under shelter until June, and then place out-of-doors, and take in-doors to bloom in autumn.

Mignonette, for the purposes indicated, sow thinly in four or five-inch pots in August and September.

Musk.—Many like to have this in winter and spring, and for this purpose the plants are best when inured to the process gradually. When the earliest pots die down

they should be placed aside, and kept in rather a dry state. These should be started earlier next season by watering with water about 70°, and when the young shoots appear, they may either be divided and potted, or receive some rich top-dressing. When growing, the plant dearly loves moisture.

Violets.—The general favourite. The *Tree* is hardier than the *Neapolitan*, and, therefore, for the first winter months, most suited to a window. The *Tree* is merely an artificial form, obtained by training the stem upright, instead of letting it grow in its natural prostrate state. For great quantities of flowers, I prefer letting the plants grow naturally. The easiest mode for getting nice little flowering plants is to divide the plants that have done flowering in April and May into nice little pieces, well supplied with roots; prepare a piece of ground with a good sunny aspect, dig it, and pulverise it well, and enrich it with very decayed dung and leaf-mould, and in this insert your little plants firmly, some eight inches separate; water and shade until the plants are freely growing, then remove, shade, prevent weeds growing, keep the ground stirred, and cut away all runners, and by the middle of September you will have nice compact little plants, worthy of filling as many pots as you can find room for, taking the plants carefully up with balls, trundling some light, rich soil round them, and giving a little shade until they root afresh, when they may stand under shelter until moved to the greenhouse or window.

General hints as to the management of window-plants were introduced in a late article on Watering Plants in Winter. The great things are—keeping the foliage thoroughly clean, by sponging and washing, and preventing the atmosphere around them becoming too dry in winter from the fire of the room. Covering the pots with moss just kept moist would tend to prevent this. Would “Flora” desire a combination of luxuriance and neatness, then I would advise showing no pots in her window; but have a box, or vase, of the suitable size, and so as to be movable to suit the weather; and, in this artistic-looking box, all the necessary pots would be concealed, by plunging in, and covering them over with moss. This would also enable her to embellish the sides of the box with many pretty trailers, such as *Nemophila*, *Lobelia*, *Verbena*, *Anagallis*, &c. These could be grown in small pots, the balls then wrapped in moss, plunged in water a few minutes, and then the moss-covered ball inserted in any corner where there was room for it; and be easily moved whenever a change of the main plants was desirable.

There are rather full directions given on window-gardening, in Vol. V., p. 227, and 242; in Vol. VI., p. 71; and in Vol. VIII., p. 20.

R. FISH.

IMPATIENS JERDONIÆ.

(Mrs. Jerdon's Balsam.)

I HAVE lately seen some specimens of this lovely plant in blossom, and was so much pleased with the fact that it flowers for at least nine months in the year, that I determined to write a short essay about it, and recommend it to the readers of THE COTTAGE GARDENER.

Every now and then, amongst a batch of new plants, there may be one, or perhaps two, that are real acquisitions to our collections. Such an one, for instance, is the *Dielytra spectabilis*, and *Philesia buxifolia*; and now I can safely say the *Impatiens Jerdoniæ* is another.

The three grand properties that render a plant worthy of great cultivation, are—good habit, free blooming, and easy culture. Now the plant I am drawing attention to has good habit, that is, it is of moderate growth, seldom exceeding one foot in height; it branches freely, so as to form, with slight assistance, a dense bush as wide as it is

high; and the foliage is handsome and not too large, is of a deep green on the upper side, with the midrib coloured with pink. The under side of the leaf is also richly coloured. Then in the second good property, that of free blooming, no plant excels it. Every branch flowers profusely. I have counted upwards of twenty blooms on one stem. They are produced in clusters from the tops of each shoot rising well up above the foliage, each flower measuring fully an inch in length. The lower portion of the flower is the largest part, and is of a glowing brick-red colour; at the top of this there is, as it were, a collar of green, above which, are three short, stout, floral leaves (forming a kind of hood), which are of a clear bright yellow, giving a finish of colouring such as few flowers possess. The third good quality, that of easy culture, I certainly shall claim for this charming plant, and will below describe it in full.

History.—This singular-looking plant, with its rough dark brown stems, deep green, pink-ribbed leaves, and gay yellow, green, and red flowers, is only a Balsam; but it is a perennial one. It was sent to this country by Mr. McIvor; he discovered it in the Neilgherry Hills, in British India, but a considerable way down the hills, so much so as to warrant us keeping it in a warm house through the winter. I have seen it kept in a cool house; but there it loses most of its leaves and all its flowers. It was sent to Messrs. Veitch and Son two years ago, and has been exhibited by those gentlemen frequently, and obtained prizes. I have never seen any seed-pods on any of the plants, but I should think it would seed freely if planted out-of-doors in a frame for that purpose.

Propagation by Cuttings.—The stems of this plant are thick and fleshy, and, in consequence, will soon decay if cut and put in immediately. The way to manage, is to take off short shoots close to the stem, from which they may easily be separated, either by lifting it up and down, or by passing a knife through it just at the point between the stem and the cutting. There it is small, and, therefore, the wound is not great, and the danger of damping off is lessened. A tolerable good plant will yield several such cuttings. When all are taken off, let them lay on the bench while a cutting pot is being prepared. Choose a pot of a sufficient size to hold the cuttings without crowding. Let the pot be quite clean, and then drain it well by filling it half full with crocks (broken pots). On this drainage place some pieces of turf, then put on this layer another layer of fibrous peat and sand, in equal parts, and on that place pure sand sufficient to fill the pot up to the rim, then give a gentle watering to make the sand firm. In a few minutes it will be ready for the cuttings. Plant them in the sand with a smooth stick somewhat thicker than the cuttings, planting them at equal distances. Should any leaves project outwards beyond the rim of the pot, gather them in carefully and keep them within with small sticks. Fill up the holes made by the dibber with dry sand, and then give a gentle watering again to settle the sand firm to each cutting. Then place the cutting under a hand-light, or a small frame, set upon a heated surface. We use a tan-bed for the purpose; but a bed of coal-ashes, heated by hot-water pipes under it is the best. Bell-glasses are too close for these fleshy cuttings. In this situation they may remain till roots are emitted, which will be the case in about a month. Then pot them off into small pots, and replace them under the frame till the pots are filled with roots. They may then be set out in the stove, and gradually inured to bear the open air and light; then repot them in rich, open soil, mixed with hard lumps of very rotten dung, and also a few pieces of charcoal. In this compost they will grow rapidly, and soon make large plants with many side-branches, all blooming freely.

Summer Management.—Whoever grows this plant must remember that it is a Balsam, though a half-

shrubby perennial one; and that remembrance will at once give him an idea how to cultivate it; namely, a free, open compost, plenty of moisture over the leaves before the flowers appear, and a liberal supply at the roots always, or, at least, through the summer; also, give plenty of air every sunny day, and repeat freely and frequently; the last time to be about the middle of August. By this attention the plant may be kept blooming till November, or even longer. (I saw one in flower on the 6th of this month.) If the greenhouse is filled with such half-hardy stove plants, it will be a good situation for it in order to grow it to the highest perfection.

Winter Management.—When this commences depends upon the state of the plant. If the leaves begin to fall, and flowers are no longer produced, the season of rest has commenced. Then reduce the water and heat also; but do not allow the soil to become parching dry. It should be just moist, but not wet. As soon as the days begin to lengthen, and the heat to increase, give a little more heat and water, and as soon as growing is perceived turn the balls out of the pots, reduce them, and repot the plants, and grow them on as before.

T. APPLEBY.

ADVICE TO YOUNG GARDENERS.

(Continued from page 181.)

I AM afraid my young friends will think that I have forgotten them; but it is not so. Absence from home, and a press of other matter, have prevented me from continuing my advice papers for their instruction, warning, and benefit. An opportunity now presents itself, and I gladly embrace it.

On this occasion, I purpose to make a few remarks on what a young man should aim at in following the profession of a Gardener, and the conduct he should adopt in order to succeed. I intend this paper for the more especial benefit of the young man who has acquired a considerable knowledge of gardening, and, in consequence, has attained the highest rank of journeyman-gardener—that of foreman.

There are three kinds of Gardeners, namely, the Nursery Gardener, the Artist Gardener, and the Gentleman's or Serving Gardener. Now, whichever of these branches of the business a young man may intend to follow, it is absolutely necessary to begin at the lowest step,—that of learning the manual operations,—such as digging, hoeing, planting, mowing, nailing, training, and pruning; potting plants and sowing seeds. All these he should learn to do quickly and well. For many of these various operations there are no schools so efficient as a market-garden or a nursery. I can speak confidently on this point, from experience; for I began my gardening life in Messrs. Pontey's Nursery, at Kirkheaton, near Huddersfield; and, to show what practice will do, I may mention, that when I was only twelve years old, I could dibble in young Larches at the rate of one thousand per hour. I was afterwards employed in the market-garden of Mr. Major, the now eminent landscape gardener, at Knowstrop, near Leeds. He taught me how to dig a piece of ground level, well and quickly. There I found my skill in dibbling useful in pricking out Celery and Cabbages. I trust my young friends will not smile at my mentioning such common operations. I mention them to show how necessary and useful it is to acquire a dexterity and quickness in performing such work. A man cannot teach others, or know when such things are properly done, unless he has practised them himself. My young man, having gone through all those operations, and acquired a character for ability and steadiness, will, when of a proper age, be appointed foreman. And now is the time for him to determine which branch

of gardening he will devote himself to during life. I will take them in rotation. If he intends to be a Nursery Gardener, whether as master or foreman, he should particularly direct his attention to propagation, such as raising plants from cuttings and seeds; and also, the peculiar arts of budding and grafting; and in this day, the art of hybridizing, to improve fruits, vegetables, and flowers. He should aim to acquire a correct knowledge of the kinds now in existence, so as to know which sorts will be most profitable to the grower.

If he has the ambition to desire to be an Artist Gardener, such as is now known by the term Landscape Gardener, he should study the art of drawing in perspective, as well as mere plans of gardens or garden buildings; but as both these branches are not so much in demand as the third branch, it is to that the greatest number of young men should direct their attention; and when they have attained the rank of foremen, to strive with all their powers to render themselves fit for a head-gardener's situation in a gentleman's family. And here, let me press upon my young friends this fact, that in every pursuit of life, the surest way to obtain success is to deserve it. And I would further observe, that there is no country in the world where a gardener has a better chance to get a good situation than in England. And yet we find there are many that do not succeed well, or continue to keep a good situation when they obtain it. Why is this? Chiefly, it is because too many young men take situations before they are fit for them; and what is the consequence? They lose, very soon, their first place; do not acquire a character for ability and steadiness, and they almost ever after continue at the foot of the ladder, and eventually become nursery or market-gardener's labourers. This is a rock upon which many a promising youth splits, and suffers in consequence. I say, no man is fit for a head-gardener's place until he has been foreman for at least three or four years in a good place. It would be of great service to him, even then, to get into one of the London nurseries for a year or two, and then look for, and wait patiently for, a good place in a good family. He will be tempted to take a place; many will very likely be offered to him; but I bid him beware, and remember, that one false step at first will scarcely ever be recovered. Indifferent places are plentiful. Sadly, too many of the gentry are difficult to satisfy, and are often changing their gardeners, and that renders such places often vacant. The young, inconsiderate man thinks that he can please and manage the most difficult of masters; accepts the place; perhaps marries on the strength of that opinion; and is in danger of being ruined for life. Now, every man aims, or ought to aim, at procuring, by the exercise of his talents, an independence for his old age,—such as, I am truly happy to say, my good friend, Mr. Beaton has achieved. May he live long to enjoy it. Let me ask any young man seriously to consider this point, and, as far as he possibly can, choose such a place as he can manage, and keep it as long as possible, till he has made a provision for the evening of his days. In order to accomplish this, my young man should begin to lay by a portion of his wages the first, or, at farthest, the second year after he has obtained a head place; and this he should unremittingly persevere in till his object is attained. Set a certain sum apart for that purpose annually, even if it be only ten pounds a year. That sum, with interest added yearly, will, by the time he is fifty years of age, buy an annuity sufficient to keep him in all the necessaries of life. I mention this low sum, though I am well aware that a steady, careful man will, even in a moderate place, save considerably more, and will, of course, be able to purchase a more liberal annuity.

T. APPLEBY.

(To be continued.)

THE USES OF A THREE-LIGHT FRAME.

A CORRESPONDENT having enquired whether Sea-kale and Rhubarb might yet be forced in a frame, the dimensions of which he gives as twelve feet by six, and as his case very likely represents many others, inasmuch as many persons who have only a frame in which all their forcing, sheltering, and other work of this kind is performed in the whole year, it may not be out of place to detail the various purposes to which a single three-light frame may be put, with other work connected therewith; and in doing so, I will not shrink from describing those homely shifts, which even those having a greater range of glass structures at command are now and then obliged to adopt, as it will be necessary to borrow many supposititious ideas;—I nevertheless trust that none will be introduced but what are likely to be wanted to meet many cases all demanding consideration.

In the first place, let us suppose an amateur living in the suburbs of a large town or city, and his garden-ground and other premises of a very limited extent; but having a taste for gardening, and some leisure time, he is willing to devote a part of it in the healthy and interesting pursuit of rearing such productions as his wants or inclinations suggest; and at the same time, we suppose he is not afraid of the labour nor trouble such a pursuit costs; but is prepared to meet such labour in that manful spirit which ensures a successful issue to all exertions. Well, then, we will suppose his back-yards to be (as many are) surrounded by high walls or buildings; yet on one or more sides an opening exists, whereby a good share of sunshine may find its way in at all times; well, then, in this back-yard it is fair to suppose the amateur will be anxious to have his little, humble, forcing contrivance erected, and whatever else, in the portable way, will be supposed to find a sort of a home there; for apart from this, we will suppose there is a small garden devoted to the growth of such things as the taste of the party delights in, and which we will, at a future time, make some remarks upon; but, in the mean time, will confine the present chapter to the uses of a "three-light frame" throughout the year.

Beginning with the autumn—that season in which Nature has pointed out as a sort of resting time for the cultivator, for that is the time in which we will suppose glass structures, not expressly devoted to particular objects, generally receive a new class of inmates; we will suppose, that the amateur has a taste for flowers, and that he has a few flower-beds, in which he grows some of the most popular flowering plants of what are termed the "bedding" ones; a portion of these it is, therefore, necessary to save through the winter each year; and the frame, having done duty in the Cucumber or Melon-forcing way during the summer, is in a condition to receive this class of plants at a time when they can no longer be trusted with safety out-of-doors, which we will suppose to be the middle of October, or, it might be, a little later, if the frame be still wanted for its summer crop; but the plants must be sheltered at night, in some way or other, lest sudden frost nip them off ere they be housed.

Leaving the time for removing them into the frame for those to determine who have the manipulation, it is proper to say here, that a thorough cleansing of the inside of the frame and glass ought to take place ere it be used, and if it be not mounted on brickwork, in something like pit-fashion, it must be set on a piece of dry, sound ground; some parties excavate for it; but this I object to; I would rather have it on the surface, on some spot where worms are not likely to be numerous nor troublesome; a full exposure to the midday's sun is also necessary; in fact, it ought to have the full amount of sunshine the whole day. On this plot let the frame

be placed, and its interior being rendered sweet and clean by a good washing, pots of *Geraniums*, *Verbenas*, *Calceolarias*, and other plants which have struck, and likely to grow, are at once removed there, and likewise, such plants as the cultivator may have been rearing for the decoration of his rooms during winter; for it is quite possible to have a better display, even at this season, with no more assistance than what a single frame affords; for a batch of *Chinese Primroses* might be brought on during the summer in the Cucumber-frame, and a few *Cineraria* plants might be grown out-of-doors at the same time, to which might be added a few bulbs, as well as other spring-flowering plants, of which Mr. Fish has given several selections. Well, in this frame, this motley assemblage of plants being arranged, and the glass all right, the giving of air and water, and covering up at nights, will be easily attended to, and the autumn weeks will be spent in that way; but the return of longer days will call for the frame for other purposes, and toward the middle or end of January some other place must be found for the plants then occupying it.

The *Chinese Primroses*, *Bulbs*, and *Cinerarias*, being then in an advanced state, might be at once placed in the sitting-rooms, or such other light places as can be spared for them, while the others ought, also, to have a light, dry, airy place allotted them; but free from frost, though it need not be warm. The precise time at which this change takes place may vary according to the wish of the cultivator; but if he be not very particular about having Cucumbers very early, he might allow the plants to remain here until February, when shelter for them will be more easily obtained; but this will be determined by the circumstances of the case, and we will pass on to the next crop or purpose to which the frame may be applied.

Presuming that *Cucumbers*, or, it may be, *Melons*, are wanted by the amateur, much time may be saved if young plants fit for turning out could be had from a neighbour. This, in the suburbs of a large town, is not so difficult a matter as in remote country districts; because, it must be known that delicate seedling plants, like *Melons* and *Cucumbers*, cannot endure the hardships of conveying long distances; while, with care, they may be moved from a short distance without deriving any serious harm. But in the mean time, it will be prudent to see after the fermenting material for the bed, if such be wanted, and if it be an old-fashioned three-light frame, or box, a hotbed must be prepared for it ere the plants are brought home; and though some parties may give the preference to tan for making a hotbed, it is so uncertain, that I will not recommend it unless under very peculiar circumstances. But good stable-dung that has been frequently turned and tempered so as to produce a nice steady heat, may be adopted with more certainty of commanding sufficient heat; and the bed being built and frame placed on it, a day or two might elapse before the soil be put in and the plants inserted; but as I have, in a former article, detailed this duty, it is needless repeating it here. Suffice it to say, that the amateur who has a wish to make his single frame as profitable as possible might sow many kinds of seeds in pots, which he would rear in his frame, and as the season advances, he might venture to put in a few pots of cuttings, as *Verbenas*, *Petunias*, &c., taking especial care to kill every particle of insect or disease on them before placing them there: a very good way being to place the cuttings (for a short time before potting) in a strong decoction of tobacco, and if there be mildew on them, to dust them well with sulphur on taking them out. Seedling plants will be more easily managed; these may consist of *Balsam*, *Coxcomb*, sundry annuals for out-door flowering, and many other things,—taking care, however, not to over-

crowd the frame with anything likely to injure the proper inmates there.

The culture and management of the Cucumber being supposed to go on all favourably, a few seeds of a good, useful Melon might be put in early in May, and by the end of the month, plants large enough to turn out might be had in readiness for another hotbed, which we will suppose to be preparing to receive them. This second hotbed to be made precisely the same as the first, only the plants on the first one need not be sacrificed, for, by gradually inuring them to the open air, and giving them some temporary shelter after the frame is removed, it is likely they will keep in a bearing condition for some time; while the Melon crop will also be advancing.

The mode in which these different productions ought to be treated will be dwelt on hereafter. Suffice it to say, that with good management, a crop of Melons may be so obtained, the last of which will be quite ready to cut by the time first mentioned in this chapter, that is, the beginning or middle of October; after which time, Melons are seldom good, unless materially assisted by fire-heat in some way or other.

There are other ways of using a single frame; and at an early opportunity I will return to this subject. But the above will, perhaps, be of service to the party making the inquiry. More will be given another time.

J. ROBSON.

THE LAST OF HIS LINE.

By the Authoress of "My Flowers."

(Continued from page 283.)

THE married life of Lady B.— was not a happy one. How could it be? Sir Charles was *personally* kind, because he was a good-natured man, and not violent in temper; but he made her wretched in another way. He was cold-hearted, and incapable of real affection for any one but his only daughter—if that could be called affection which led to such melancholy results;—but he was vain and frivolous, loved admiration, and was full of empty flattery and folly. In every family he distinguished one female member, and made her the object of his attentions, which were always marked and exclusive; and then he had another base disposition, that of making quiet, but effectual, mischief among all his particular acquaintances, which prevented their detecting his conduct, each fancying herself and themselves the favourites, while the plotter secured his own advantage by stratagem and falsehood. From family to family he roved about, smiling and satisfied—nothing could exceed his kindness to each, or his treachery to all; and for many years this system worked well. His poor wife, in bad health, sat at home, chewing the cud of bitter and not sweet fancy. She well knew his turn, and what was enacting in each friend's house; but she could do no good, and therefore she had to endure his attentions and visits to others as best she might. What can poor wives expect, when they marry without asking the man "the reason of the hope that is in him?" or whether he has any "hope" at all?

Such a parentage as this could work nothing but ruin to the child. Matilda B.— was a clever, energetic, fearless little thing, when she first came with her parents to G.—, and was idolized by both. But she was brought up wretchedly. Her mother ill, and unable to look after her, making her a spy upon her father's actions, and suffering her by degrees to go about wherever she liked, associating with the servants, and forming acquaintances unknown to her mother; Sir Charles, applauding all she said and did, and too much occupied with his own crooked path to notice or care about those of Matilda. What a terrible, destructive bringing up was this! How could it end, but in wickedness and woe?

The neglect of her education at last struck her parents, and they determined upon sending her to a school in France. This was so dangerous a situation in all cases, but especially for a girl of Matilda's character, that re-

monstrances were offered on the subject by friends, who felt the peril so strongly as to induce them to take that liberty. But all in vain. To France she was sent; and from France she returned, improved in person and manners, but deeply injured in mind. The childish tastes and characteristics were confirmed and strengthened, and the fearless, unabashed child, was grown into the daring, self-willed, unscrupulous girl.

Lady B— became paralytic. A sudden stroke disabled her for some time; but though she never fully recovered from it, she was for some years tolerably comfortable, and met with marked and unwearied kindness from many friends. It is a wonderful thing to observe how gracious the Lord's dealings are with the creatures He has made, even those who know Him not, or defy Him to His face. He has compassion on the work of His hands—"He remembereth that we are but dust"—and while He spares His rebellious children to live their allotted days, He feeds and clothes them, and grants them a thousand mercies, which they receive either as the consequence of *chance*, or as coming from the hand of man. Sir Charles and Lady B— were eminently proofs of this gracious dealing. Their strokes and chastenings were heavy and severe—but there was mercy mixed with all, which, though it made the pitying love of God so plainly manifest, shed no ray of light upon the darkness within. One family of kind hearts and plentiful means were raised up to cheer and soften the closing trials of poor Lady B—. They persuaded Sir Charles to remove altogether to their house, with his wife and daughter, and make it their home. They provided every comfort for the invalid, and nursed her with unremitting tenderness and care; and thus, amid poverty, privation, sickness, trouble and anxiety, a haven of *worldly* rest was provided for the perishing body, while it lingered on the brink of a dark and tremendous eternity.

During the illness of his wife, Sir Charles carried on his favourite amusements without molestation; and when she was settled in the hands of kind friends, he was still more unshackled. Towards the close of her life—for some months, in fact—he was kindly and unremittently attending the sick-beds of two ladies, the wives of those at whose houses he had visited most intimately, and between whom he had made most deliberate mischief. His medical skill was unrivalled; his kindness and interest for each and all extreme; and the gratitude called forth by his friendly exertions, deep and sincere. Amidst all this, nothing could exceed the misrepresentations, falsehoods, and slander carried on by this unhappy, dark-minded man. This may seem to some of my readers a sketch of an improbable character, but it is too true. We often meet good and evil so strangely mixed up together as to baffle us for a time; yet it is scarcely possible to imagine any one so deceptive as this. What seemed kindness was but its counterfeit; for while he ministered to the wants and sufferings of his friends, or those he seemed benevolently to assist, he injured and defamed them. Oh, what a mystery of iniquity is the heart of man! Where there is light and grace, we may well confess that it is "deceitful and desperately wicked;" but where darkness overspreads it, and Satan reigns triumphant, what language can describe the abominations that are therein!

It is not often that men's minds descend to the small concerns of life. Their evil deeds take a wider range, and deal with larger objects; but Sir Charles was puerile, unmanly, and creeping, in his wickedness. His mind was bent into a narrow compass, and the evil of his heart busied itself with trifles. If it is possible to make the way of sin offensive in the eyes of sinners, it is when its objects and pursuits are small and contemptible—when its aims and ends are weak and unworthy of a reasonable being. Sin is always the same in the eye of a pure and holy God; but shades and features differ, and variously affect the opinions of men. It is useful to observe the workings of evil in the heart and life, in every variety. We may gain clearer views and a deeper insight into the "chambers of imagery" within our own unclean breasts; and who does not require a fuller and clearer knowledge of himself?

(To be continued.)

THE FIRST EXPERIENCE OF A COCHIN EATER.

HAVING been obliged, from motives of poultry-yard economy, to deliver over to my cook two Cochin cockerels, I confess it was with sundry misgivings that I saw them make their appearance on the dinner-table, so much having been said against them as "table birds." However, there is nothing like experience; and I must say that these birds, although fast advancing beyond "the days of chickenhood," being nearly seven months old, proved fully equal to any fowls I have ever eaten of the same age, and were in quality, white, juicy, and by no means tough, or strong in flavour, even to the legs, which were not darker in colour than those of other fowls of the same age. Nor were they, in appearance, the ungainly things some have described them as being, even without that favourite (in my opinion injudicious) practice of crushing the breast-bone being carried out on them. These birds were of a dark cinnamon colour, and weighed respectively, 5 lbs., and 5½ lbs., "out of their feathers," and were taken from where they were running with others to the place of execution. The laying properties of the Cochin fowl being so well established, I need say nothing on that head; but as opinions differ about their fitness for the table, I feel that I should be showing some *want of taste*, if, after having tasted these birds, I did not attempt to do justice to their merits; and I must say, that as far as my experience goes, I am led to believe, that if not quite so *symmetrical* as Dorkings, yet that, if only due care be taken in selecting for your stock short-legged and compact birds, they will be by no means of the awkward-squad kind *when on the table*; and I do further believe, that their adversaries, who have cut them up so unmercifully, have not had the pleasure of *cutting up* birds of this kind. —R. O., *Edinburgh*.

MILDNESS OF THE SEASON.

THERE were gathered, January 8th, in the open garden here (south coast of Cornwall), Picotees, Verbenas, Fuchsias, Rhododendrons, Veronica speciosa, and Andersonii, Roses, Mignonette, and Salvias. It is, indeed, a charming winter climate, but unfits one for winter expeditions elsewhere.—W. W. W.

QUERIES AND ANSWERS.

GARDENING.

DIOSCOREA BATTATA.

"Will you kindly oblige me, and probably many of your readers; or ask that prince of gardeners and sensible writers, Mr. Errington, to do so, by giving us some account of the new Chinese Tuber (*Dioscorea japonica**) to which Mr. E. alludes in his article on Potato growing in THE COTTAGE GARDENER? I should much like to have a *bond fide* statement as to its eligibility, or otherwise, so far as is known, as an esculent for our soil and climate; and also if tubers are to be procured at a less price than 10s. *for four*. —WM. CUST GWYNNE, M.D."

[R. ERRINGTON begs to inform Dr. Gwynne that he is perfectly ignorant of the real qualifications of the *Dioscorea Battatas*; knowing little more than what has been conveyed to the public through the medium of the advertisements. It is always extremely desirable that somebody should encourage the introduction of new things, especially if likely to become of general utility; but at the same time, it is well to bear in mind the severe ordeal they will have to undergo when they assume to rival or supersede such invaluable roots as the Potato. To amateurs, perhaps, more than any other class of society, may we look for a patient trial of such things. In the admirable price current of Messrs. Rendle and Co., of Plymouth, seedsmen, &c., we see it is advertised, and the price affixed.]

INARCHING VINES.

"I have a vine 100 feet long, which I planted three

* It is *Dioscorea Battata*; the *D. japonica* is a different species.

years since. The Vines have done very well; for most of them have shown themselves this year, whether they were true to name or not; but I am sorry to say, to my great disappointment, that there are several that are not true, which I am desirous of inarching this season. I have got some two years old of *Barbarrosa*, and other good sorts, which I should like to inarch them with, if you would be so kind as to inform me when will be the best time, and which will be the best way to do them; whether you would put the old wood together; or start them first, and put the young wood together.—W. J.”

[Inarch your Vines before the sap rises, by joining last year's wood to the main stems. Or you may wait until the Vines grow, and then inarch young wood. They will take almost any how with a little care.]

BLIGHT ON BRUSSELS SPROUTS.

[The blight sent from South Devonshire by *Amateur*, as extremely detrimental to the Brussels Sprouts, Borecole, &c., seems to be the common *Aphis Brassicae*, which the present extraordinary season has developed to an unusual extent. Cold and rain, which we may now expect, will destroy them; and fumigating with tobacco-smoke, under a wide canvass bag or cover, will be found effectual in saving any plants which may be particularly prized. As the insects are generally on the undersides of the leaves, washes of gas-tar water, and similar mixtures, can hardly be relied upon.—W. W.]

GLOIRE DE ROSAMENE ROSE—BEDS ROUND A SUN-DIAL.

“I wish to know whether there is any chance of the ‘Gloire de Rosamene’ succeeding and flowering well in a light soil and very sunny situation; and what compost would suit them best? Eight beds round a sun-dial, no shade, and exposed to westerly winds, what flowers would succeed best for a summer and autumn garden?—Q. T.”

[The beautiful Gloire de Rosamene Rose is not so well suited for all light soils as we once supposed. It is the best bloomer of all roses on chalky, light soils; but now, on our sharp, sandy soil, which is rich enough for the Cabbage Rose, it only does moderately, and it is so all over the district. It is one of the few roses which will not live on a foreign stock, except for a year or two. It must have its own roots; and any light soil, rich or poor, will grow it freely enough: but to see it in perfection, it must be in a chalky district—where no other Rose does half so well. Fresh soil, taken from the surface of a common, and some lime rubbish or chalk mixed with it, with a little rotten dung or leaf-mould, ought to get it up to the mark in most places. We never had it on heavy Rose soil, or that inclined to clay.

Your own choice from the popular class of bedding-plants will answer your eight *Sun-dial beds*, such as Scarlet Geraniums, perpetual Geraniums, as *Lady Flora Hastings*, *Touchstone*, the *Diadematus*, *Rouge et Noir*, *Lady Plymouth*, *Dandy*, and *Golden Chain*, and a long list of *ceteras*; also Verbenas, Petunias, Calceolarias, Campanulas, (Enocheras, and so forth,; and all our volumes are full of such names. If your beds are all of the same size, in that way of arranging them round a dial the plants ought to be either all of one height, or alternately high and low all round.]

SOWING HOLLYHOCK SEED.

“A friend of mine having made me a present of some first rate Hollyhock seed, I should be much favoured by your informing me, through the medium of THE COTTAGE GARDENER, what time I should sow it, so as to get the plants to flower next summer.—A LOVER OF THE HOLLYHOCK.”

[The right time to sow Hollyhock seeds, so that the seedlings may flower the first season, is just the moment they are ripe, about the end of August; the seedlings to be kept under cover from frost till the spring—say till early in April, and then to be planted out, and they will bloom next September at the latest. When the seed is kept over the winter, as yours has been, no art of man can get the seedlings to flower that season. Now your seedlings will not bloom till next autumn twelvemonths, whether you sow

them now, or next March, or at the beginning of May. We would choose the later period. Sow them in the open ground, and transplant them into rows next October, one foot apart from plant to plant, and two feet or more between the rows, and we would pull up every one which we did not approve of as soon as the first few blossoms opened.]

HEATING TWO HOUSES BY ONE BOILER.

“I have two Greenhouses, one on each side of a path: I wish to heat both of them by means of one furnace only, by the hot-water plan. What I wish to know is, if I could carry the hot-water pipes under the path, so as to heat both houses with the one furnace. If it could not be done, if you would advise me on the best plan to adopt, you would confer a favour on me. I have hot-water pipes in one house.—AMATEUR.”

[We should have answered better if we had known if the pipes in the house are higher in level than the path underneath which they must go. There would be no difficulty if the pipes were carried through both houses and path altogether on the same level. Suspecting the pipes already in the house are above the ground level, the pipes in the other house we would advise to rise one inch or so higher to the farther end. It will be as well if the lowest part of the pipe under the path is not lower than the top of the boiler. The pipes connecting the flow and return of both houses, underneath the path, should be smaller in bore than the pipes in the house; and to the lowest part, an air-pipe, a quarter-of-an-inch in diameter, should be drilled in, rise through the earth, and stand higher than the pipes in the house, with its end open, and resting against the end of the building. A similar pipe should be inserted in each pipe at the extremity of the pipes at the highest point in the other house. The reason why we wish to have the connecting-pipes smaller than those in the house is to increase the force of circulation. It is amazing how soon a four-inch pipe is heated by even a half-an-inch supply-pipe. Two leaden pipes, one or one-and-a-half inches in diameter, would connect the two houses very well. The object of having a small air-pipe communicating with the air at the point underneath the path, and at the extreme end, is to prevent air accumulating there, which would prevent circulation. By having taps on the connecting-pipes, you can keep the other house from being heated at will. You will observe that you cannot heat the other house by this mode, without heating that where the pipes are already, and that the latter will therefore be the hottest. If your boiler had been in the centre, between your houses, you could easily have heated either one, as you liked.]

POULTRY.

HAMBURGHS AT BIRMINGHAM.

“I was much surprised to see your answer to ‘A Subscriber for Years,’ in your last number, with respect to Hamburgs at Birmingham. You say that no hen-tailed Spangled Hamburg cock there received either a prize or a commendation. Surely the writer of that cannot have been there. All the Golden Spangled Hamburgs that had prizes awarded them (with the exception of third prize in chicken) were hen-tailed cocks. And whilst I have my pen in hand, I may say, that I think the Judges displayed very poor judgment in the Golden Spangled classes. The first prize in the aged birds they withheld; a class containing twenty-seven entries; and, as far as my judgment goes, they were the choicest collection of Spangled birds ever brought together. It may be said, I was a disappointed exhibitor. I was not; for I saw better birds there than my own; but not those to which the prizes were awarded. It would be very interesting to me to know the opinion of other breeders who were at Birmingham and saw the birds. I have just read over what you say again. (You say, ‘Our remarks on this class will have already have shown our opinion as to this clear hackle being out of place in a Spangled Hamburg, either gold or silver.’) Now, I never saw a Golden Spangled Cock with a clear hackle, either hen-tailed or sickle-tailed, and I believe there never was one. But the hackle in the Silver Spangled, I say, ought to be pure white; and in all the cocks that obtained prizes at Birmingham they were so. The hackle of the hen-tailed

Silver Spangled is spotted, or marked, similar to the hens.
—JAMES DIXON, *Bradford*."

[Few persons, probably, are better qualified to pass their criticisms on the "Hamburgh" classes than Mr. Dixon. We regret, therefore, to find ourselves at variance with him on the point of the hen-tailed spangled cocks at Birmingham. But the statement to which he refers, viz., that "no hen-tailed bird in those classes received either prize or commendation;" and his rejoinder, that "many prize pens had this feature," are only to be reconciled on the supposition that a widely different estimate of what departure from the the sickle form would be held to constitute the hen or square-tail, is taken by himself and the writer of the article in question. The requirement of dark hackle in the spangled birds, might, certainly, have been limited to the silver variety, as no one, we imagine, would contest the point of a light hackle for the golden cocks.]

HISTORICAL NOTES ON THE INTRODUCTION OF VARIOUS PLANTS INTO THE AGRICULTURE AND HORTICULTURE OF TUSCANY: a summary of a work entitled *Cenni storici sulla intraduzione di varie piante nell'agricoltura ed orticoltura Toscana*. By Dr. Antonio Targioni-Tozzetti. Florence, 1850. — (*From the Horticultural Society's Journal*.)

(Concluded from page 309.)

The two last chapters of Prof. Targioni's work are devoted to ornamental trees, shrubs, and herbs of exotic origin, which have, at various times, been introduced into Italy, and are now become more or less common in Tuscany. The list comprises nearly one hundred, but among them there are many which have only been carried there from English gardens in the latter half of the eighteenth century, whose history is of little interest, or may be found in any of our Garden Catalogues, and which are therefore here omitted. It will be sufficient for our present purposes to extract some notes relative to the more important, especially to those which have been so long cultivated in Italy as to have become almost naturalised.

Among them one of the earliest known is the *Oriental Plane-tree* (*Platanus orientalis*), a native of Western Asia, highly prized by the Romans, as we learn from Pliny, for its grateful shade, and celebrated by their most distinguished poets and orators. The same naturalist informs us that it was brought from Asia across the Ionian sea to plant round the sepulchre of Diomedes, in the island named after him, now Palagosa, one of the Tremiti isles off the Adriatic coast of the kingdom of Naples. Plane-trees were subsequently imported into Sicily, and from thence by Dionysius the First to a garden of his at Reggio in Calabria, whence they spread over the rest of Italy. They were, according to Pliny, brought to the neighbourhood of Rome by a freedman of Marcellus Exerminis in the time of the Emperor Claudius, and have ever since been extensively planted in Italy, where they attain a great age and size*. It is therefore a matter of no small surprise that so many ages should have elapsed before this tree found its way into other European states. It was not known in France until Buffon planted it in the Jardin du Roi in the middle of the eighteenth century; but Clusius had already carried it to Vienna as early as 1576, and in England it had been imported somewhat earlier still by Sir Nicholas Bacon, father of the Chancellor, who planted it in his garden at Verulam in 1548.

The *American Plane* (*Platanus occidentalis*), now become very common in Italy, and generally preferred to the Oriental, was only introduced there long after Tradescant had brought it to England from Virginia about the year 1640.

Another tree, no less celebrated for the beauty of its shade, so valuable a quality in Italian climates, is the *Diospyros lotus*, like the plane-tree a native of Asia Minor, but of very early introduction into Italy. It was confounded

by ancient Greek and Roman writers with the *Zizyphus lotus*, or with the *Celtis australis*, under the name of *tree lotus*. But these lofty and ancient trees recorded by Pliny, one on the square of the temple of Lucian, another near the temple of Vulcan, and some others near the house of Lucius Crassus, as celebrated for their spreading branches and thick shade, could have been no other than the *Diospyros lotus*, and not the *Celtis* as supposed by some commentators. For having been for ages extensively planted in Italy, and from its readiness to sow itself there, the *Diospyros* has now become naturalised in some localities in such abundance as to induce its insertion in several local floras as indigenous. The American *Persimmon* (*Diospyros virginiana*) with larger fruits, now also to be met with in Italy, was only introduced there from England about the year 1793.

Professor Targioni's notes on the history and geography of the *Cedar of Lebanon* (*Pinus cedrus*) are now superseded by the discussions which have of late occupied some of our most distinguished botanists and horticulturists, and which it would be out of place to enter into on the present occasion. We will merely mention as a curious fact, that a tree, said to have been known to the ancients as of great value, and growing in parts of Western Asia and North Africa, with which the Romans had much intercourse, should never have been planted in Italy till it was carried from England to the Botanic garden at Pisa in the year 1787; that is, above a century after Miller had introduced it into the Apothecaries' Garden at Chelsea, and fifty-three years after Bernard de Jussieu deposited one with so much ceremony in the Jardin du Roi at Paris. The original Pisa tree is now in great beauty, and the species is becoming very generally planted in Tuscany.

The *Cypruss* (*Cupressus sempervirens*), generally admitted to be a native of Crete, Syria, and Asia Minor, has for ages been common in Tuscany, where it attains great size and beauty, although individuals of extraordinary dimensions were more frequent in past times in the avenues of seignorial villas than they are at present. The wood was much celebrated by the ancients for its durability. Pliny, as well as modern writers, quotes several instances of its remaining sound for centuries. We learn from Thucydides that this incorruptibility caused it to be used by the Athenians for the coffins of distinguished personages, and that the tree was then already considered as an emblem of sorrow and death, whence the ancient custom of planting it in burial-grounds. Recognised as exotic by Pliny, it had, however, already been introduced into Italy before the time of Cato, who was born in the year 232 B.C. The two remarkable varieties now known, with upright and with spreading branches, were equally distinguished by Pliny.

The *Horse Chestnut* (*Æsculus hippocastanum*), a native of the mountains of Central Asia, was unknown to the ancients. It was first introduced into Constantinople in 1540, whence Qualecbeno, physician to the German Embassy, sent a branch with leaves and fruit to Matthioli in 1557, and it was probably raised at Florence at about that time, for in 1569 Jean Bauhin saw a tree of it about the size of a mulberry in the garden of the Grand Duke Cosmo I. Clusius planted one at Vienna in 1576, and Bachelier introduced it into France from Constantinople in 1615. Two from the same source were planted soon after 1596 at the entrance of the botanic garden at Pisa and attained an immense size. One was destroyed in a storm in 1806, the other still remains.

The *Cherry Laurel*, or common Laurel of our gardens (*Prunus laurocerasus*), a native of the Asiatic coast of the Black Sea, is frequent in Italian gardens of comparatively mild climate, for, like many evergreens, it seems more impatient of severe frost there than with us. Unknown to the ancients, it was first brought from Trebizonde to Constantinople about the year 1540, and thence sent by the Austrian Ambassador, David Ugnard, to Clusius at Vienna in the year 1576. From the individuals there raised, it has since spread over the rest of Europe. In Tuscany it was within a very few years of that time procured by Cesalpin, then Professor at Pisa, from the garden of Genoa.

This cherry Laurel must not be confounded with the real classical laurel, our bay-tree (*Laurus nobilis*), which is indigenous to Italy and other parts of Southern Europe.

* A plane-tree is mentioned as still existing at Arcoli in 1813, which, from authentic records, was then at least five centuries old.

The *Weeping Willow* (*Salix babylonica*), a native of Western Asia, is generally supposed to be the willow of the Euphrates, upon which, as we read in the Bible (Ps. cxxxvii.), the Jewish singers hung their musical instruments. It is not, however, mentioned by any ancient Greek or Roman writers, nor yet by the Italians of the middle ages, and, common as it now is all over Europe, it does not appear in any catalogue of Italian gardens until that compiled by Micheli, in 1715, of the botanical gardens of Florence. It is, however, clearly represented by Benvenuto Cellini on a basin in the Royal collection at Florence, executed in the sixteenth century, but whence that artist derived his models is unknown.

The *Pride of India* (*Melia azedarach*), now common in Southern Europe, is an East Indian tree, first brought into Italy from the Levant in the sixteenth century, as it is supposed, by the Franciscan friars. It was then chiefly planted about convents, the perforated kernels being used for making paternoster chaplets. It is first mentioned in Tuscan catalogues in 1635.

The *Julibrissin* (*Albizia julibrissin*), a favourite ornamental tree in Southern Europe, as well as in Northern Africa, the Levant, and East India, is a native of the mountains of Central Asia, from the Caucasus to China. It was first brought into Italy from Constantinople in 1749, by the Cavaliero Filippo Albizzi, to whom Durazzini dedicated the genus he founded upon it, which has been adopted by botanists since the last revision of the *Mimosas* of Linnaeus.

The *Lilac* (*Syringa vulgaris*) is supposed to be a Persian shrub, introduced into Europe about the year 1597. It was, however, certainly in the botanical garden at Padua before 1577, for Matthioli, who died in that year, tells us he had received a fresh specimen in flower from Cortuso, then director of the Padua garden, during the time that he was finishing his commentary on Dioscorides. The small-leaved *Persian lilac* (*Syringa persica*) is of still more recent introduction, and said to come from the same country. We are not aware of any really wild specimen of either species having been deposited in our herbaria, or having been actually met with by modern travellers, but we should be inclined to believe that the common lilac is but a luxuriant variety of the Persian produced by cultivation, and the more so as some intermediate forms known by the names of *lilas varin*, &c., have been raised from seeds of the latter. The Transylvanian *Syringa Josikæa*, now occasionally to be met with in gardens, is a perfectly distinct scentless species.

Hibiscus syriacus, the *Althæa frutex* of our gardens, of Syrian origin, as its name implies, has become naturalised in the hedges of some parts of Northern Italy. The precise date of its introduction is unknown, but it certainly had already been for some years in Florentine gardens previous to 1596, the period assigned for its introduction into England.

Amongst the North American trees, more or less generally established in Italy, Professor Targioni enters into some details respecting the following species: the *Acacia* or *Locust-tree* (*Robinia pseudacacia*), the *Tulip-tree* (*Liriodendron tulipiferum*), the *Magnolia* (*Magnolia grandiflora*), the *Black Walnut* (*Juglans nigra*), the *Negundo Ash* (*Negundo fraxinifolia*), the *Deciduous Cypress* (*Taxodium distichum*), the *Glenditschia triacanthos*, *Bignonia Catalpa*, *Pyrus coronaria*, and *Juniperus virginiana*. They all succeed remarkably well in Italian climates, to which they had been introduced at various periods during the course of the eighteenth century.

The *Casse* or *Cassis* of French perfumers (*Acacia farnesiana*), of South American origin, is much cultivated in Southern Europe for ornament, and in some localities for the extraction of the essence from its flowers. It is so generally spread over the hotter regions of both hemispheres, that it has been recorded as indigenous to many parts of the Old World, as well as of America; and some of the most careful observers among modern East Indian botanists, seeing it so abundant in parts of the peninsula at considerable distances from the haunts of Europeans, have felt convinced that it was a real denizen. Yet there are many circumstances which induce us to come to the conclusion that it has only become naturalised after cultivation.

It has ever found much favour with the Arabs and other Mabometan races, and sows itself with remarkable facility, and it is most frequently found in India around villages. On the other hand it is an undoubted native of the West Indies and of South America, and was never known in the Mediterranean region until introduced from thence. We are told that the first seeds were raised at Romo in 1611, in the garden of Cardinal Odoardo Farnese, having been imported direct from St. Domingo, and that from the issue of these plants it subsequently spread over Southern Europe. It is not stated whether it may not also have been at an early period brought over from South America by the Spaniards.

Schinus molle, commonly but improperly called the *pepper-tree*, was certainly first introduced by the Spaniards from Chili or Peru before the year 1570, when a fruiting branch was sent to Clusius from Spain. It is now very common in Southern Italy, but no less so in Tuscany, where it is often injured by the winter frosts.

Among Eastern trees introduced into Italy through France or England in the course of last century, the *Broussonetia papyrifera*, *Ailanthus glandulosa*, *Sterculia platanifolia* and *Ginkgo biloba* (commonly called in this country *Salisburia adiantifolia*), are not infrequently to be met with in Southern Europe; and the *Camellia*, first cultivated in Italy in the Caserta garden, near Naples, in 1700, is now a great favourite in Tuscany, where, in sheltered situations, it will attain great size and beauty in the open air.

The common *Roses* of Italian gardens are none of them indigenous, but the native country and precise form of the wild type of most of them is involved in much uncertainty. The most anciently and generally cultivated one, the common *Cabbage Rose* (*Rosa centifolia*), is that which is the most generally alluded to by poets and other writers, from the days of Virgil and Pliny, to our own times. It is also much cultivated in Southern Europe for the use of perfumers. It is said to have been brought from Persia into Greece and Italy in very remote times. The *Provence Rose* (*Rosa gallica*) is found wild in France and Germany, but whether indigenous or not it is uncertain. It is believed to have been referred to by Pliny, under the names of *Rosa prænestina*, *carthagineusis*, and *milesia*. The *Damask Rose* (*R. damascena*), and the common *White Rose* (*R. alba*), are also believed to have been among those enumerated by Pliny, and to be natives of Southern Europe, though not of Italy. The *Rosa moschata* appears to have been introduced from the Levant in the sixteenth century. The climbing roses, now forming so beautiful a feature in Italian promenades and gardens (*Rosa indica*, *R. Banksiana*, and *R. multiflora*), are of very recent importation from French and English gardens, as none of them appear to have been known in Italy before the commencement of the present century.

From the latter end of the sixteenth century, there arose in various parts of Italy, especially at Florence, a great rage for the cultivation of innumerable varieties of *Anemones* (*A. coronaria*), *Ranunculus* (*R. asiaticus*), *Hyacinthus* (*H. orientalis*), *Tulips* (*T. Gesneriana*), and *Narcissus* (*N. poeticus*). The wild types of most of them, perhaps of all except the *ranunculus*, are to be found in Italy and Greece as well in the Levant, but the production and cultivation of the garden varieties of all of them commenced in the East. They were all introduced into Western Europe from Constantinople at various periods between the years 1550 and 1600, together with the *Crown Imperial* (*Fritillaria imperialis*), said to be a native of Persia, the *Muscari moschatum* from the shores of the Bosphorus, the *Lilium chalcedonicum* from the Levant, which had all been then for some time in Constantinopolitan gardens. Of all the above-mentioned flowers, the anemone and narcissus alone can be recognised under those names in the writings of the ancient Romans, for the various hyacinths of Virgil and Pliny were evidently very different from the plant we give that name to.

The *Tuberose* (*Polyanthes tuberosa*) is generally said to be a native of East India, Java, and Ceylon, but it is there everywhere cultivated, as it is also in almost every South American garden, and its origin is very uncertain. Judging from the localities of its nearest allies in the genera *Agave* and *Beschorneria*, we should consider some part of the

Mexican empire as its most probable fatherland, and that it was carried to Europe and to Asia very early after the conquest of that territory. It was known to Clusius at Vienna, in 1594. Rumphius tells us that it was introduced into Amboyna, in 1694, from Batavia, where it was very common, meaning probably in gardens there. He also tells us that the Italian ones were the most esteemed in India. Yet in Italy tuberoses were still very scarce in the beginning of the eighteenth century.

The *Jessamine* (*Jasminum officinale*), a native of East India, now as it were naturalised in some parts of Italy, is believed to have passed from East India into Arabia, thence into Egypt, and lastly, in the middle ages, into Italy. It appears to have been unknown to the ancient Greeks and Romans, for the references made to it by some commentators are evidently erroneous. The first mention of it in Italy is in a poem by Rucellai, written about 1524, where it is spoken of as a new flower unknown to the ancients.

Matthioli, about 1559, also tells us it had not been long imported into Italy, although it was then already common in every garden. The *Jasminum grandiflorum*, a mere variety of the common one and very abundant in India in the wild state, was imported from Spain in the sixteenth century, and the *Mugherino* or *Sambak* (*Jasminum Sambak*), direct from Goa in the seventeenth.

Carnations (*Dianthus caryophyllus*) are first recorded as having been cultivated by King René of Anjou and Provence, at Aix, in the thirteenth century, but whether there raised or imported from more southern climates does not appear. The wild type is common in Southern Europe, but with flowers of such very reduced dimensions that we must presume a period of several ages requisite to produce those splendid varieties now in cultivation.

In the latter half of the sixteenth or in the early years of the seventeenth century, a considerable number of South American plants were introduced into Italian gardens either direct from Brazil, Mexico, or Peru, or through the Spaniards. Among those which speedily became generally cultivated, we may mention the *Sunflower* (*Helianthus annuus*), from Mexico or Peru; the *Nasturtium* (*Tropæolum majus*), the *Marvel of Peru* (*Mirabilis Jalapa*), and the *Quamoclit*, (*Ipomœa Quamoclit*), from Peru; and the *Passion-flower* (*Passiflora carulea*), from Brazil. *Dahlias*, from Mexico, and *Enchias* from Peru, were not imported till the close of the eighteenth century. The east Indian *Chrysanthemums*, the Japanese *Hydrangeas*, and the Cape *Pelargoniums*, all well-established in Italian gardens, were brought there from England or France at the close of the last or the commencement of the present century.

Having thus passed in review the long list of plants generally cultivated in Tuscany, whose history is investigated by Professor Targioni-Tozzetti, it remains for us to express our regret that our limited space has prevented our entering into numerous interesting details, for which we must refer to the work itself, as well as for the authorities upon which they are founded, which are carefully given on every occasion. They show a vast amount of patient research, and supply a body of facts and references which it will be necessary for every one to consult who interests himself in this branch of botanical history and geography. We must also express our obligations to the several botanists recently returned from long and active explorations of Northern and Western India, whose important observations and enlightened views have materially assisted us in the investigation of the wild types of cultivated species of real or supposed Asiatic origin.

HOW LONDON IS SUPPLIED WITH MEAT, POULTRY, VEGETABLES, AND MILK.

(Continued from page 310.)

Mr. Giblett, the noted butcher, late of Bond Street, calculates that the amount of meat brought by the railways into Newgate is three times that supplied by the London carcase butchers, who annually send 52,000 oxen, 156,000 sheep, 10,400 calves, and 10,400 pigs. Taking this estimate,

and applying it also to the Leadenhall market, we shall have at

	Bcasts.	Sheep.	Calves.	Pigs.
Newgate, meat	156,000	468,000	31,200	31,200
Leadenhall, ditto	5,200	42,600	..	..
Live stock brought to } London }	161,200 322,188	509,600 1,630,793	31,200 101,776	31,200 127,852
Total supply of live stock } and meat to London . }	483,388	2,140,393	132,976	159,052

This we are convinced is still below the truth, for we have not included the country-killed meat sold at Farringdon and Whitechapel markets.* The total value of this enormous supply of flesh cannot be much less than fourteen millions annually.

These figures demonstrate that the falling off of sheep sold at Smithfield is solely because they now come to town in the form of mutton. It is sent to a much greater extent than beef, in consequence of its arriving in finer condition, being more easily carried, and better worth the cost of conveyance on account of the larger proportion of prime joints. Indeed, the entire carcase of the oxen is never sent, since the coarse boiling pieces would have to pay the same carriage as the picked "roastings." Newgate, be it remembered, is eminently a West End market, and fully two-thirds of its meat find its way to that quarter of the town. Accordingly, most of the beef "pitched" here consists of sirloins and ribs; and in addition to whole carcasses of sheep, there are numerous separate legs and saddles of mutton. This accounts for a fact that has puzzled many, namely, how London manages to get such myriads of chops. Go into any part of the metropolis and look into the windows of the thousand eating-houses and coffee-shops in the great thoroughfares, and in every one of them there is the invariable blue dish with half-a-dozen juicy, well-trimmed chops, crowned with a sprig of parsley. To justify such a number, either four-fold the supply of sheep must come to London that we have any account of, or, in lieu of the ordinary number of vertebræ, they must possess as many as the great boa. When the prodigious store of saddles which the country spares the town have once been seen the wonder ceases. "Sometimes I cut one hundred saddles into chops to supply the eating houses," says Mr. Banister, of Threadneedle Street.

The weather preserves a most delicate balance between Newgate and Smithfield. Winter is the busy time at the former market, when meat can be carried any distance without fear of taint. As soon as summer sets in Smithfield takes its turn; for butchers then prefer to purchase live-stock, in order that they may kill them the exact moment they are required. Sometimes as many as 1200 beasts and from 12,000 to 15,000 sheep are slaughtered in hot weather on a Friday night in the neighbourhood of Smithfield for Saturday's market. Every precaution is taken on the railways to keep the meat sweet. The Eastern Counties Company provide "peds," or cloths cut to the shape of the carcase or joint, for the use of their customers, and sometimes it is conveyed from the north in boxes. When, in spite of care, it turns out to be tainted, the salesman to whom it is consigned calls the officer of the market, by whom it is forthwith sent to Cow Cross, and there burnt in the nacker's yard. According, however, to a competent witness, Mr. Harper, had meat in any quantity can be disposed of in the metropolis to butchers living in low neighbourhoods, who impose it upon the poor at night. "There is one shop, I believe," he says, "doing £500 per week in diseased meat. This firm has a large foreign trade. The trade in diseased meat is very alarming, and anything in the shape of flesh can be sold at about 1d. per lb. or 8d. per stone."

* There is, we confess, some little discrepancy between this estimate of the country-killed meat at Newgate, and the known quantity brought in by railway, as most assuredly 161,200 oxen, 509,600 sheep, and 62,400 calves and pigs far outweigh the 36,487 tons of meat brought by the different lines, even "sinking" the offal. But so assured is Mr. Giblett, and the Smithfield Commissioners with him, that he is under the mark, that we give credit to his estimate, and take it for granted that much country-killed meat must come to market by other conveyance than the railway.

If the reader is not already surfeited with the mountains of meat we have piled before his eyes, let us beg his attention for a few minutes to game and poultry, which we bring on in their proper course. Leadenhall and Newgate, as all the world knows, are the great metropolitan depots for this class of food, especially the former, which receives, perhaps, two-thirds of the entire supply. The quantities of game and wild birds consigned to some of the large salesmen almost exceeds belief. After a few successful battues in the Highlands, it is not at all unusual for one firm to receive 5000 head of game, and as many as 20,000 to 30,000 larks are often sent up to market together. All other kinds of the feathered tribe which are reported good for food are received in proportionate abundance. If it were not for the great salesmen, many a merry dinner would be marred, for the retail poulterers would be totally incapable of executing the constant and sudden orders for the banquets which are always proceeding. The good people at the Crystal Palace have already learned to consume, besides unnumbered other items, 600 chickens daily; and from this we may guess how vast the wants of the entire metropolis. The sources from which game and poultry are derived are fewer than might be imagined. The Highlands and Yorkshire send up nearly all the grouse; and scores of noblemen, members of Parliament, and other wealthy or enthusiastic sportsmen, beating over the moors, and walking for their pleasure twenty-five miles a-day, assist to furnish this delicacy to the London public at a moderate rate.

Pheasants and partridges mainly come from Norfolk and Suffolk; snipes from the marshy lowlands of Holland, which also provides our entire supply of teal, widgeon, and other kinds of wild fowl, with the exception of those caught in the "decoys" of Cambridgeshire and Lincolnshire. From Ostend there are annually transmitted to London 600,000 tame rabbits, which are reared for the purpose on the neighbouring sand dunes. We are indebted to Ireland for flocks of plovers, and quails are brought from Egypt and the south of Europe. In most of our poulterers' windows may be seen the long wooden boxes, with a narrow slit, in which these latter little birds are kept until required for the spit. Not long since, upwards of 17,000 came to London *via* Liverpool, whither they had been sent from the Campagna near Rome. Of the 2,000,000 of fowls that every year find a resting place *vis-à-vis* to boiled tongues on our London tables, by far the greatest quantity are drawn from the counties of Surrey and Sussex, where the Dorking breed is in favour. Ireland also sends much poultry. No less than 1400 tons of chickens, geese, and ducks, are brought to town annually by the Great Western Railway, most of which are from the neighbourhood of Cork and Waterford, whence they are shipped to Bristol. Londoners are accustomed to see shops of late years which profess to sell "West of England produce," such as young pork, poultry, butter, and clouted cream. All these delicacies are brought by the Great Western Railway, and are principally the contributions of Somersetshire and Devonshire. The bulk of the geese, ducks, and turkeys, however, come from Norfolk, Cambridge, Essex, and Suffolk—four fat counties, which do much to supply the London commissariat, the Eastern Counties Railway alone having brought thence last year 22,462 tons of fish, flesh, fowl, and good red herrings.

For pigeons we are indebted to "our fair enemy France," as Sir Philip Sidney calls her, but now we trust our fast friend. They proceed principally from the interior, and are shipped for our market from Boulogne and Calais. How many eggs we get from across the Channel we should scarcely like to say. Mr. McCulloch considers that the capital receives from 70 to 75 million—a number which we think must be much below the mark, seeing that the Brighton and South Coast line brings annually 2600 tons, the produce of Belgium and France. At Bastoign, in the latter country, there is a farm of 200 acres entirely devoted to the rearing of poultry and the production of eggs for the supply of London.

No perfectly accurate account can be given of the number per annum of poultry, game, and wild birds which enter Leadenhall and Newgate markets; but the following estimate was handed to us by a dealer who turns over £100,000 a year in this trade. As the list takes no account of the quantity which goes direct to the retailer, nor of the

thousands sent as presents, it must fall short of the actual consumption:—

Grouse	100,000
Partridges	125,000
Pheasants	70,000
Snipes	80,000
Wild Birds (mostly small)	150,000
Plovers	150,000
Quails	30,000
Larks	400,000
Widgeon	70,000
Teal	30,000
Wild Ducks	200,000
Pigeons	400,000
Domestic Fowls	2,000,000
Geese	100,000
Ducks	350,000
Turkeys	104,000
Hares	100,000
Rabbits	1,300,000

5,759,000

In addition to its dead game and wild fowl, Leadenhall market is quite a Noah's ark of live animals. Geese, ducks, swans, pigeons, and cocks, bewilder you with their noise. Intermingled with these birds of a feather are hawks, ferrets, dogs and cats, moving about in their wicker cages, and almost aggravated to madness by the proximity of their prey. The major portion of the live stock is designed either for sporting purposes or for "petting" and breeding, and do not belong to the commissariat department. Of the dead game and poultry, the seven railways bring to London about 7871 tons weight in the course of the year.

In taking leave of the poultry-yard we are reminded of the dairy, and of the large establishments required to fill the milk-jugs of London. There are at the present moment, as near as we can learn, 20,000 cows in the metropolitan and suburban dairies, some of which number 500 cows apiece. Even these gigantic establishments have been occasionally exceeded, and one individual, several years ago, possessed 1500 milkers—a fact fatal to the popular superstition, that, notwithstanding many attempts, no dairymen could ever muster more than 999. The terrible ravages of pleuro-pneumonia, which many believe to be a contagious disease, have cured the passion for such extensive herds. The larger dairies of the metropolis are on the whole admirably managed, and the cows luxuriate in airy outhouses, but the smaller owners are often confined for space, and the animals are sometimes cooped in sheds, placed in tiers one above another. The country dairymaid laughs at the ignorance which a Londoner betrays of rural matters when on a visit to her master, but she would be perplexed in her turn if told that in the capital they fed the cows chiefly upon brewers' grains, and milked them on the *second story*! A few years since Mr. Rugg appalled the town, which had forgotten Matthew Bramble, Esq., and the "New Bath Guide," by detailing a nauseous process which he affirmed was in use among cunning milkmen for the adulteration of their milk. There was, however, a great deal of exaggeration in the account, and Dr. Hassel, whose analyses of various articles of food in the "Lancet" are widely known, states that the "iron-tailed cow" is the main agent employed in the fraud, and that the only colouring matter he has been able to discover is annatto. Nearly all the cream goes to the West End; and one dairymen living at Islington, informed us that he made £1200 a-year by the trade he carried on in that single article in the fashionable part of the town. It must be evident, upon the least consideration, that the London and suburban dairies alone could not supply the metropolis. If each of the 20,000 cows give on the average 12 quarts a-day, the sum total would only be 240,000 quarts. If we suppose this quantity to be increased by the exhaustless "iron-tailed cow," of which Dr. Hassel speaks, to 300,000 quarts, the allowance to each individual of the two millions and a quarter of population would be little more than a quarter of a pint. This is clearly below the exigencies of the tea-table, the nursery, and the kitchen, and we do not think we shall make an over estimate if we assume that half as much again is daily consumed. Here again the railway, which in some cases

brings milk from as far as eighty miles, makes up the deficiency. The Eastern Counties line conveyed last year to London 3,174,179 quarts, the North-Western 144,000 quarts, the Great Western 23,400 quarts, the Brighton and South Coast 100 tons, and the Great Northern as much perhaps as the North-Western. The milk is collected from the farmers by agents in the country, who sell it to the milkmen, of whom there are 1347, to distribute it over the town. In course of time it is possible that town dairies may entirely disappear. Cowsheds, often narrow and low, in thickly populated localities, cannot be as healthy for the animals as a purer atmosphere; and though experiment has shown that they thrive admirably when stalled, the food they get in these urban prisons can hardly be as wholesome as that provided by the verdant pastures of the farm. The milk which comes by railway has, however, this disadvantage, that it will not keep nearly so long as the indigenous produce of the metropolitan dairies. The different companies have constructed waggons lightly hung on springs, but the churning effect of sudden joltings cannot be altogether got rid of.

Of the vegetables and fruit that are brought into the various markets of the capital, but especially to Covent Garden, a very large quantity is grown in the immediate neighbourhood. From whatever quarter the railway traveller approaches London, he perceives that the cultivation of the land gradually heightens, until he arrives at those suburban residences which form the advanced guards of the metropolis. The fields give place to hedgeless gardens, in which, to use a phrase of Washington Irving, "the furrows seem finished rather with the pencil than the plough." Acre after acre flashes with hand-glasses, streaks of verdure are ruled in close parallel lines across the soil with mathematical precision, interspersed here and there with patches as sharp cut at the edges as though they were pieces of green baize—these are the far-famed market-gardens. They are principally situated in the long level tracts of land that must once have been overflowed by the Thames—such as the flat alluvial soil known as the Jerusalem Level, extending between London Bridge and Greenwich—and the grounds about Fulham, Battersea, Chelsea, Putney, and Brentford. Mr. Cuthill, who is perhaps the best authority on this subject, estimates that there are 12,000 acres under cultivation for the supply of vegetables and 5000 for fruit-trees. This seems an insufficient area for the supply of so many mouths, but manure and active spade husbandry compensate for lack of space. By these agencies four and sometimes five crops are extracted from the land in the course of the year. The old-fashioned farmer, accustomed to the restrictions of old-fashioned leases, would stare at such a statement, and ask how long it would last. But his surprise would be still greater at being told that after every clearance the ground is deeply trenched, and its powers restored with a load of manure to every thirty square feet of ground. This is the secret of the splendid return, and it could be effected nowhere but in the neighbourhood of such cities as London, where the produce of the fertilizer is sufficiently great to keep down its price. And here we have a striking example of town and country reciprocation. The same waggon that in the morning brings a load of cabbages, is seen returning a few hours later filled with dung. An exact balance as far as it goes is thus kept up, and the manure, instead of remaining to fester among human beings, is carted away to make vegetables. What a pity we cannot extend the system, and turn the whole sewerage by drain-pipes entirely into the rural districts, to feed the land, instead of allowing it, as we do, to run into the Thames, and pollute the water to be used in our dwellings.

The care and attention bestowed by our market-gardeners is incredible to those who have not witnessed it; every inch of ground is taken advantage of—cultivation runs between the fruit-trees: storming-parties of cabbages and cauliflowers swarm up to the very trunks of apple-trees: raspberry-bushes are surrounded and cut off by young seedlings. If you see an acre of celery growing in ridges, be sure that on a narrow inspection you will find long files of young peas picking their ways along the furrows. Everything flourishes here except weeds, and you may go over a 150-acre piece of ground without discovering a single one. Quality, even more than quantity, is attended to by the best growers; and they

nurse their plants as they would children. The visitor will sometimes see "the heads of an acre of cauliflowers one by one folded up in their own leaves as carefully as an anxious wife wraps up an asthmatic husband on a November night; and if rain should fall, attendants run to cover them up, as quickly as they cover up the zoological specimens at the Crystal Palace when the watering-pots are set to work.

Insects and blight are also banished as strictly as from the court of Oberon. To such a pitch is vigilance carried, that, according to a writer in "Household Words," blight and fungi are searched after with a microscope, wood-lice exterminated by bantams dressed in socks to prevent too much scratching, and other destructive insects despatched by the aid of batches of toads, purchased at the rate of six shillings a dozen!

(To be continued.)

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

PLANTS FOR WINDOWS (*Flora*).—See our article to-day by Mr. Fish.

ERECTING GREENHOUSES (*M. F. G.*).—Will be attended to; the subject is rather large for a correspondent's column.

IMPATIENS JERDONIÆ (*F. F.*).—Few manage this so well as Mr. Veitch; he does wonders with it, but you will see what can be done. Mr. Appleby has given some directions for its culture to-day.

NUTMEG IN COMMON STOVE (*F. F.*).—We fear you will not succeed, unless you can command from twelve to twenty feet of head room, and a strong moist heat.

VINES BREAKING LATE (*A Top Sawyer*).—Do not be alarmed; do not hurry them. If they grow so long, or even if they have much hardened in the wood, they will require more time to break. Keep the temperature rather under than above 60°, until they get leaves, and keep the house moist. See that the roots are not starving.

COCHIN-CHINA FOWLS.—A Subscriber wishing for some "really short-legged birds with good breasts" had better write for them to G. W. Johnson, Esq., West Highlands, Winchester.

MESSRS. WEEKS AND CO.'S ADVERTISEMENT (*Amateur*).—They are too respectable a firm to make any false statements. If you write to them they will give you any information you require.

PRESERVING SPECIMENS OF BIRDS (*C. T. S.*).—Our correspondent will be obliged by directions for inserting the wires and mounting these. The Arsenical Soap, for which we gave the receipt, is to rub into the inside of the skins, &c., to preserve them. Our correspondent also wishes to know how foreign birds' skins, imported in a dry, hard state, are to be softened.

DISCOREA BATTATA (*A Plymouthian*).—This is *not* the same as the *Discorea sativa*, or Yam of the West Indies. The latter will not thrive in England in the open air.

WORK ON PLANT-CULTURE (*A Reader*).—"The Cottage Gardeners' Dictionary," published by W. S. Orr and Co., Amen Corner, price 8s. 6d., will suit you. Your list of plants shall be attended to.

INDEX TO COTTAGE GARDENER (*Rev. G. P.*).—This is published in two of our January numbers. You need not bind up the four pages of advertisements.

BIRMINGHAM RABBIT CLUB (*W. B. Y.*).—Any one giving some information as to who is secretary of this club will oblige our correspondent.

OUR FIRST VOLUME (*H. W. Wright*).—"The last two pages" of our No. 8 were printed separately, to substitute for two erroneous pages in the third number. Your copy, we presume, was so corrected.

PINE APPLES (*D. P.*).—We are not aware that Mr. Fleming ever published a separate work on this fruit.

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WEEKLY CALENDAR.

D M	D W	JAN. 30—FEB. 5, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermio.	Wind.	Rain in Inches.						
30	Tu	Ptinus Fur.	30.141—30.111	52—45	S.W.	—	45 a 7	43 a 4	6 38	12	13 34	30
31	W	Hilary Term ends.	30.204—30.088	53—40	W.	—	43	44	7 24	13	13 43	31
1	Th	Podura plumbea; stones.	29.960—29.939	53—35	S.W.	42	VII	IV	7m56	14	13 51	32
2	F	PURIF. CANDL. DAY.	30.274—30.119	44—22	N.E.	—	40	48	rises.	☺	13 59	33
3	S	Podura viridis; huckwheat.	30.327—30.241	33—21	N.E.	—	38	50	6 a 11	16	14 6	34
4	SUN	SEPTUAGESIMA SUNDAY.	30.071—29.833	45—35	S.E.	10	37	52	7 22	17	14 12	35
5	M	Silpha opaca.	29.937—29.869	44—40	S.W.	—	35	54	8 34	18	14 17	36

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 44.2°, and 32°, respectively. The greatest heat, 57°, occurred on the 3rd, in 1850; and the lowest cold, 12° on the 4th, in 1830. During the period 111 days were fine, and on 85 rain fell.

In whatever direction the researches of science combined with practice extend, invariably are they rewarded with a beneficial result to the cultivator of the soil; while, among other gratifying additions to our knowledge, they as unfailingly add to the known illustrations of "The Wisdom of God manifested in the Creation."

Among such illustrations is the intimate dependance of animals and vegetables upon each other for health and strength, for breath and food. If vegetables did not give out Oxygen Gas, and if animals did not give out Carbonic Acid Gas, they would all be suffocated,—for each gives out the gas which is the vital air of the other. They purify for each other the atmosphere. Then, again, they are continually feeding upon each other. Animals live by consuming plants, and almost all plants only flourish when they are fed with the decaying remains of animals. These remains, whether of their flesh or of their excrements, abound in Ammonia, or its basis, Nitrogen; and during the year just closed, Mr. Pusoy, from his own practice, and from a close consideration of this subject, so important to the cultivators of the soil, has come to the conclusion, that they may accept this as an axiom,—

"IT IS A LAW OF NATURE, THAT SUBSTANCES STRENGTHEN VEGETATION, MAINLY BY THEIR CONTENTS OF NITROGEN."

As long since as 1828, we had arrived at a similar conclusion, and thus wrote in London's *Gardener's Magazine* of that year:—

"The stimulating powers of excrementitious manures arise from the salts of ammonia they contain. Sir H. Davy found vegetation assisted by solutions of muriate of ammonia (Sal ammoniac), carbonate of ammonia (Volatile salt), and acetate of ammonia. Night-soil, one of the most beneficial of manures, surpasses all others in the abundance of its ammoniacal constituents in the proportion of 3 to 1. It may be observed that the nearer any animal approaches to man in the nature of its food, the more fertilising is the manure it affords. I have no doubt that a languishing plant, one, for example, that has been kept very long with its roots out of the earth, as the orange trees imported from Italy, &c., might be most rapidly recovered, if its stem and branches were steeped in a tepid, weak solution of carbonate of ammonia; and, when planted, an uncorked phial of the solution were suspended to one of the branches, to impregnate the atmosphere slightly with its stimulating fumes."

It is because they abound in Nitrogen that Guano, Night-soil, all other excrementitious matters, Woollen Rags, Oils, Glue Maker's Refuse, Sugar Maker's Scum, all the salts of Ammonia, and all Nitrates are beneficial to plants.

We shall enter upon this subject fully hereafter, but will arouse our reader's attention especially to the importance of the Nitrates, that is of salts containing Nitric Acid, by the following able abstract of Mr. Pusey's experiments, for which we are indebted to Mr. Cuthbert Johnson's *Farmer's Almanack* for the present year.

For the information of our non-chemical readers we must state, that *Nitric Acid*, better known to them as Aqua-fortis, contains 26 per cent of Nitrogen; and that Ammonia, so familiarly known in the form of "Smelling Salts," contains 75 per cent of Nitrogen:—

"Mr Pusey has addressed himself very ably to the question of 'the natural law by which nitrate of soda acts as a manure, and on its substitution for guano' (*Jour. R. A. S.* vol. xiv., p. 374)—a scientific inquiry, the result of which, as he fairly remarks, may render the steps of experience more sure, just as the sailor, while buffeting with a stormy sea, ascertains his course by the abstruse calculations of the astronomer. From the result of his own trials, and those of others, he draws the conclusion that it is 'a great law of nature, that substances strengthen vegetation mainly by their contents of nitrogen.' His experiments were made with great care on grass lands. The quantities of the manures employed are given in the following table. Column I. gives the manure employed on five square feet; II., the quantity applied in drachms; III., the water in pints; IV., the effect on grass, perfection being taken at 10. The first series were made Sept. 22. (*See also post*, p. 29)—

I.	II.	III.	IV.
Nitrate of soda	6	1½	10
Ditto	3	—	9
Nitric acid of commerce.	8	—	8
" "	6	—	8
" "	4	—	8
" "	2	—	8
" "	1	—	2
" "	0½	—	0
Second series, October 3—			
Nitrate of soda	6	3	10
Nitric acid	4	—	8
Ammonia.....	1½	—	5
Soda.....	1½	—	0
Third series, October 4—			
Nitrate of soda	6	1½	10
Ditto	3	—	5
Nitric acid	2	—	7
Ammonia.....	1½	—	5
Potash	3	—	0

The reader may usefully compare the importance of these trials with a mineral acid, for a scientific object, with the unmeaning experiments of Arthur Young, in 1782, without any certain object or useful result (*Annals of Agriculture*,

vol. i., pp. 141, 156; vol. iii., p. 39; and, again, in 1804, *ib.* vol. iv., p. 340). Mr. Pusey's conclusions are sound and practical, and with him we trust that our better acquaintance with nitric acid will not be limited to the theory of agriculture, or remain a dead letter, without effect on our practice, for we now know with certainty the efficacy of the nitrates. But one great chemical problem of agriculture is the prevention of waste in dung-making; yet the attempts to fix the ammonia of dung have not been very happy. While some methods have not fixed it at all, others have cost in fixing it more than the result, if attained, would be worth. The favourite proposal has been the formation of sulphate of ammonia, which, under ordinary circumstances, is a fixed salt. But an experiment made last spring, on his farm, with sulphate of ammonia, against nitrate of soda, showed how little we can depend on the fixity so dearly obtained. This result has been cleared up, however, by Dr. Voelcker, who informs us that sulphate of ammonia had equally failed on the Cirencester farm; that he had often remarked a pungent odour on the land where it was used, and has little doubt that this salt, however carefully fixed, had been decomposed again and dissipated by the natural lime of the soil. Great fault, too, has been found with our ordinary mode of making dung by laying it up in heaps. It has been said, that when first put together, these heaps show the presence of ammonia by the pungent smell that escapes from them, but that after a few months their scentless state proves them to have become little better than dead woody fibre. Still it was clear that this apparently inert matter, though it gave forth no odours, had a powerful effect upon the farmer's crops, and I have long suspected, adds Mr. Pusey, that dung-hills might contain nitre. Mr. Nesbit informs me, that by analysis he has repeatedly found nitrates in ripened dung. The alkali required might be furnished by the potash of the decayed straw. But he has also found, what is a very curious chemical fact, that whereas, for forming a salt, some alkali or other is required to combine with the acid; and whereas further, nitrogen, when liberated from decomposing matter, may become either nitric acid or ammonia, which is an alkali, both nitric acid and ammonia are in fact sometimes formed in fermenting manure at the same time, for the very purpose, as it were, of combination; for Mr. Nesbit finds nitrate of ammonia in dung heaps. Again, no farming practice has been more decidedly blamed than the west country method of mixing lime with the dung-hill, because lime decomposes salts of ammonia. It was forgotten, however, that in fresh dung the ammonia is *not yet formed*, while the undeveloped nitrogenous matter contained in the dung may be most effectually fixed by the lime—may become nitrified through the mixture, exactly as in the French nitre-beds, by which saltpetre was produced during the late war for the manufacture of gunpowder. So cautious must we be in drawing chemical inferences for farmers without careful and direct experiment.

"In some experiments of Lord Kinnaird on the action upon potatoes of farm-yard dung prepared in covered and uncovered yards, and upon the following crop of wheat, this last receiving in the spring a top-dressing of 3 cwt. of Peruvian guano per acre, one acre of each produced potatoes in tons, cwt., and lbs.; wheat in bushels and lbs.; and straw in stones of 22 lbs. (*Jour. R. A. S.*, vol. xiv., p. 337.)—

	Covered dung.	Uncovered dung.
Potatoes	11 17 56	7 6 8
"	11 12 26	7 18 99
Wheat	55 5	41 19
"	53 47	42 33
Straw	220	152
"	210	160

"Dr. Anderson has given the weight in pounds and money value of the fertilising substances contained in 100,000 gallons of the sewage of Edinburgh, just as it flows upon the irrigated meadows of Lochend (*Trans. H. S.*, 1853, p. 281)—

Ammonia.....	11.0	5s. 6d.
Potash	4.1	0 9
Phosphoric acid.....	8.8	1 1

Total

Upon the whole, he very justly concludes that more than

one-sixth of the whole value of sewage is contained in its insoluble portion—the other five-sixths remaining in solution. And it is, therefore, obvious, that unless the plans by which the sewerage water is to be rendered available make use of that part which exists in solution, they must be of little value. Mr. J. L. Morton, in his prize essay on the saving and application of liquid-manure, has given, amid a great mass of other valuable details, an estimate of the expense likely to be incurred in carrying the irrigating system into operation upon a farm of 200 acres, having the steading in a central position, and the fields of a moderate size. From this we learn that the expense will be about £5 per acre (*Tr. H. S.*, 1854, p. 141) (*post*, p. 43)."

Pursuing our notes on the characteristics of excellence in various Fowls, we next come to the SPANISH. They are:—

Black.

White.

Blue, or Andalusian.

Black.—Plumage, in both sexes, uniform glossy black, reflecting rich green and purple tints; tail ample—well sickled in the cock, and square in the hen.

Form: Comb of the cock single, largely developed, serrated, and erect; that of the hen large, but pendant. Face and ear-lobes, in both sexes, white, with the wattles of unusual size, and of a brilliant scarlet. Although these birds, as compared with the close-made Dorking, would be considered tall, and of erect carriage, "legginess" is a fault that breeders must be careful to avoid. The breast is prominent, and the body narrows rapidly towards the tail; legs clean, and dark slate-coloured.

Weight of the adult cock not under 5½ lbs., nor of the hen less than 4½ lbs.

A more compactly-formed black fowl, resembling the Spanish in its general features, but lacking the white face (the ear-lobe only being of that colour), and exhibiting even larger proportions of the comb, is termed the *Minorea* in the West of England. *Ancona*, another provincial term, is applied to the black and white mottled birds of the same general character.

White.—Whatever their origin, the "White Spanish," possessing as they do every indication of common blood, should appear in the exhibition-room side by side with their black relatives. At any rate, their claims to this position are fully as good as those of the White Shaghaes and the White Polish.

Plumage: uniformly white.

Form, features, and size, as in the black birds.

The absence of the effective contrast of colour caused by the comb, face, and plumage of the Black Spanish, renders these white birds far less striking in their appearance.

Blue, or Andalusian.—Plumage: bluish-grey, with glossy black hackle and tail.

The white face is here rarely seen in perfection, while many specimens may be found of weights exceeding the usual Spanish average. As with the White variety, the proper place for the Andalusian is in the Spanish class.

The white face should always extend well around the

eye, and up to the point of junction with the comb, though a line of short black feathers is there frequently seen to intrude its undesired presence. It is certainly objectionable, and the less of it the better; but any attempt to remove, or to disguise this eyesore, should be followed by immediate disqualification. The white face is not perfected till after the first year, especially in the case of pullets.

DIELYTRA SPECTABILIS.

I HAVE said that this beautiful plant begins to move into growth early in January, and that the leaves are seen above ground in February. They were up, with me, early in February, 1854, after enduring a hard winter before the first of the new year; but they were not more forward this season, at the middle of January, than they were last year, although the long, warm autumn continued down to that period. All this proves that the plant is as hardy as the Pæony of the borders, and is as little affected by the state of the weather during the winter; for the common kinds of herbaceous Pæonies form strong-growing buds under ground before the end of the old year, whether the glass has been at the freezing point, or at zero, from the middle of November.

In all my experience, I do not recollect the winter, whether hard or mild, to have had any influence on the underground growth of the common Pæonies; and all my experience of the habits and requirements of the *Dielytra spectabilis* go to prove the same conclusion. Owing to this natural habit of forming strong-growing buds under the surface long before the sprouts are able to rise above ground, this kind of root may be potted for forcing very much later than others with a different habit. While the Rose, and many other plants, are best if they are potted twelve-months, or more, before they are put to forcing, the *Dielytra* and Pæony need not have twelve hours between the potting-bench and the forcing-pit; but the same degree of heat is suitable for the Rose, the Pæony, and *Dielytra*.

Except in the hands of very good gardeners, the *Dielytra* is seldom improved for forcing by being established in pots; and even then, to have them not established in pots for forcing is only a tytho of the trouble. They increase in size and in strength for flowering much faster in the open ground, if the soil is rich, light, and deep for them, than under the best pot treatment. The roots are always fit and ready to pot by Christmas, and may be so potted from that time, until the leaf is ready to expand towards the middle or end of February, or later, if the frost keeps it back. Roots that are put to forcing by Christmas may be had in bloom by the middle of February, or earlier, or later, according to the judgment of the forcer. A novice should not force any plant so hard as an old practitioner, because his eye cannot so readily see how far he can force without doing more harm than good.

I have also said, that this *Dielytra* might be had in bloom from November, onwards, and I believe it may, with very little trouble; but as I do not now rule the roast, and cannot keep up a forcing establishment of my own, to prove such experiments, I am not quite sure of the point, having only had the opportunity of conducting about one-half of the experiment. In order to kill two birds with one throw, I shall begin the history of the experiment by a tale about a friend of mine, who had engaged as head-gardener with a country baronet.

After wine, and all the philosophy bearing on garden pursuits were discussed, the worthy baronet broke short with, "By-the-by, there is one thing for which my

garden has been noted for many years, and I should not like to lose the credit of it for all the sciences put together, and I hope you will attend to it." This noted thing was to have *Asparagus* to dinner on Lord Mayor's day, the 9th of November. "If you have a good stock of *Asparagus*, I can see no more difficulty in providing a dish on the 9th of October than on Lord Mayor's day, or on the 9th of any of the months, till you have it from the open ground," replied the new gardener. Yet that man never forced a dish of *Asparagus* in his life, to my personal knowledge, and he owned as much to the baronet; but for years he never failed to have new *Asparagus* for the "Nowmarket dinner," which was generally about the 9th or 10th of October.

Now, the way to have new *Asparagus* in the second week of October is much easier to manage than to have *Asparagus* in the second week in January; and very likely, to have *Dielytra spectabilis* in bloom on Lord Mayor's day, is, at least, as easy as to have it so at the beginning of the new year. But in case that I may be in the wrong as to the estimate of the difficulty, or no difficulty, I shall give the receipt by which my friend supplied the early *Asparagus*, and by which the early-flowering of the *Dielytra* may be brought to pass; so that if the latter plant disappoint you, you will have the *Asparagus* as early as the Newmarket baronet, to balance the account.

We, who write in THE COTTAGE GARDENER, seldom, if ever, point to one particular day of the month for doing this or that kind of work; yet we all know how necessary it is to have so-and-so done to a particular day in the autumn, more particularly; but my friend would prepare for his first dish of *Asparagus* on the fifth of September, and would keep to that day almost if it happened to fall on a Sunday. The preparation consisted in cutting off so much of the tops of one or more of the rows of three-years-old *Asparagus* plants as would furnish a dish or two for every week, for a month or six weeks; the roots, being still in active growth, would start immediately, with strong, fresh growth, and by the 25th of September the young *Asparagus* were an inch or two long; the old roots, or stools, were then taken up and placed in leaf-mould, over a mild hotbed, and when the season was mild, I have seen the lights nearly all off the pit before the end of the first week in October, to keep "the grass" back for the Newmarket dinner, on the 9th or 10th of the month; for, to tell the truth, the gardener was no other than your humble servant.

Last September, I tried this experiment with four large plants of *Dielytra spectabilis*, which I had growing on a border, and another lot were headed down on or about the 20th of September, and by the first week in October there were strong sprouts on the first four plants quite ready for potting, and for a slight forcing; and I am almost sure, that if I had the means to assist them on, I should have had them in full bloom before the end of November; yet these sprouts did not push above ground by the time I potted them towards the middle of January. Now, this move is well worth minding, and trying another year; the plants take no hurt from being cut down so early; and if they were not potted before Lord Mayor's day the early cutting would not tell against them; on the contrary, it would prepare them for easier work at whatever time it was thought proper to pot them for an early bloom; therefore, with a good stock of plants in the open borders, and by potting a few of them at different seasons, or once a month, from October to March inclusive, the plant may be had in the rooms, or conservatory, from November till it comes naturally from the open ground.

EARLY GRAPES.

Most Grape-growers are now aware that it is easier, both for the Vines and for the gardener, to have the

house shut upon the first of September, by which method the fruit is well set before the very dull weather comes on; less unnatural forcing, and much less attendance and anxiety are secured by this practice. The principle on which it is founded is much the same as that by which the *Dielytra* is proposed to be dealt with, and the same principle has a wider range than most people would think or believe. It was on this principle that Mr. Knight first founded the practice of pruning unhealthy Golden Pippin and other unhealthy trees; also, the Plum and other stone fruit, in September, just in time to fill up the remaining buds with healthy sap for the next season, and late enough to hinder these buds from starting that autumn. Moreover, it is on this principle that all good gardeners would wish such trees and bushes as they intend for transplanting should be pruned that season as early as the end of September. To prune any tree, evergreen or deciduous, some time, or soon after transplanting it, is not nearly so good in practice, and all the reasons which have been given for this delay, and some of them go even to twelve-months after planting, have all been founded on deductions which are now all but acknowledged to be of little or no use.

NEW DAHLIAS.

If I had taken to the florists' branch of our calling, without losing the notions which the other branches forced into my head, I should, probably, make half a fortune out of new seedling Dahlias, while the rest of the florists were in bed; at least, while their new Dahlias were in beds.

Instead of following the common herd into such wild notions as "ripening the roots," I would just do the exact opposite. As soon as my new seedling, or my newly bought in treasures, had proved themselves to my "fancy," I would cut them down to the surface of the ground that very day, were it as early as the fifth of September, the Asparagus day. I should see whether "ripening" blind, fanged tubers, and bull-necked "roots," was a better plan than taking them fresh and fresh as they bloomed, cutting off their heads in September, and striking their young startlings in October, and casting the old roots to the dogs and frost, after every inch that could be made out of them were on its own roots.

While the roots and tubers of Dahlias are at the top of their speed in September, is really the right time to get the most out of them after all; in ten days after cutting them down, eyes will sprout all round the neck. Cuttings from these sprouts have all the vigour in them that is lost in "drying," later in the season, and such vigour, too, as the plant never can put forth, under any circumstances, till that time next year; so that they would root with a quarter of the trouble with early spring cuttings from languished dry roots. A good stool would furnish cuttings in September, almost as fast as one could strike them, and as soon as it slackened in growth, I would up with it, just as I would an Asparagus stool, place it on a slight hotbed, and never cease making cuttings from it till I had more than enough; but I would keep the thing a secret until my fortune was made, and like the rest of them, I would advertise in the spring, that my only root of *Sultan* or *Sultana*, did not "break" very well; while, perhaps, I had one hundred plants of it, from the autumn strike, to go to "work" with a fresh start, and from that stock I would have no end of plants for the May market.

There is a class of gardeners, of whom I am one, who for many years have believed that the sudden falling off in the properties of first-rate Dahlias is owing to the present practice of drying the roots in winter store, that thus the energy, or vital energy of the plant is arrested so far the first season, that the "properties" give way before the plant passes from the hands of the raiser. The more care that is taken to dry the first root, and

the more plants that are propagated from it the first season, the more the constitution of the original is spent, and the new plant carries with it the spent constitution, so to speak, instead of the natural constitution of the parent, before the root was first dried; hence the cause of the constant "running out" of the best seedlings. On the other hand, we know several kinds of Dahlias which did not show any first-rate points as seedlings, and were less dolieately brought out on that account, and their properties, such as they were, have not failed yet, after many years of drying and propagation, in various ways. Nevertheless, direct experiment alone can prove whether our views are right or otherwise, and this experiment in September, beginning with a seedling, appears to me to be the only rational mode of testing the question. At all events, I am quite sure that the best and easiest way of securing a good stock of plants, on the shortest notice, is to propagate, as I propose, in September. We all know that many old garden plants refuse to bear seeds now, from the fact that they have been propagated from the roots time out of mind. Some of the border Crocuses may be instanced as being fairly worn out by division of the bulbs, and I take it that our *Dielytra spectabilis* has been introduced in this worn out state by the Chinese; but I expect now that we are to have a few seedlings of it under our way of cultivation, that these or some of them will return to the wild habits of the plant, and produce seeds freely when they come of age; then they are ready for the cross-breeder.

D. BEATON.

FORETELLING THE WEATHER.

It was noticed last week, that in November, Mr. Beaton prophesied that we should have no winter until the middle of January, or thereabouts. He even specified the very day; and if he had put out this prophecy in a shilling almanack, he might have easily procured a more than Murphy fortune for a lucky hit. The calculations on which our friend proceeded were not given to us; he may wisely keep them in reserve until another season has confirmed their truthfulness; for, changeable as is the weather, to a proverb, in our insular position, I have no doubt, that when our meteorologists continue their labours somewhat longer, there will at least be grounds obtained for predicting the general character of the season a little farther advanced than mere probable conjecture. The great evil in all more fortunate forebodings is, that—just as in a case of quack medicine that happens to be successful—we are sure to be reminded of the prophecy that was right, but left in blissful ignorance of the hundreds that were wrong. Now and then we have a striking evidence of great facts being revealed in dreams; but that would be rather an insecure basis for rearing a theory upon the importance of these fitful visions in general.

I have no doubt but there is something more than the dreamy in Mr. Beaton's calculations. A considerable number of years has led me to think, that if there is no ice with which an ice-house can be filled from the 12th to the 20th of November, it generally remains unfilled until towards the 20th of January; and though exceptions there have been, still, there has been something like a general rule in the matter.

Though nothing so definite has yet been reached as to preclude constant watchfulness over our tender plants, still much may be done by shrewd calculation, to save labour and keep down the coal bill. I know young men, that in the winter months study the growing and waning of the moon, as an element in the supply of fuel they give their furnaces at bed-time, experience having proved that, as a general rule, though

not without many exceptions, that a young moon appears in coincidence with the coldest temperature in the evening; while a waning moon coincides with the coldest temperature in the morning. I also know some instances in which severe weather was so surely calculated upon in January, that it was deemed better to defer forcing until it was past. A week's difference in the time of ripening making a very great difference in the expense of fuel, when that has to be procured at a considerable distance from canal and railway.

ICE WELLS.

There will be a scarcity of huge bricklayers bills for building these in the times that are coming. One of the best houses I ever met with for keeping ice was built with stone in a steep bank, the stone covered with the earth removed. The roof was thatched, and then covered thickly with heath. The opening looked to the south, and was merely double doors without passage. You merely opened the two doors, jumped down, and got the ice out as quickly as possible. In filling, the carts drove right up to the door, and the contents were at once emptied. The most of the huge egg-shaped wells, deemed so suitable for the purpose, are just great bores. I have a large one under my ear, which will generally hold enough for two seasons. I have long given up salting the ice, or having straw round or over it. Independently of other experience, and much observation, the melting of the ice in that well has long shown me the impropriety of sinking these wells deep, and thus bringing the ice in contact with a warmer stratum of earth. Even in the "dog days" of summer, when the house is frequently open, the ice sinks little until it gets a few feet below the ground level; but then, even at the end of October, and during November, it gives way at the sides rapidly. When packed at the sides with straw, there was but little difference as to the wasting, and all the bother of trying to get the filthy matter out when rotted.

The only reason, *now*, why these costly wells should be filled at all, is just because they are there, and the trouble is saved of making a heap on a sloping bank, and thatching it well over. Any one may have the luxury of ice for most of the summer by packing up a good-sized cone in such a place so that the water may ooze away easily, and then thatching it over with from two to three feet or more of non-conducting-of-heat material. First-rate directions for this process have been given by Mr. Beaton and others in this work.

Several cases of failure have come under my observation, but in almost every instance I have seen or heard of, the failure was owing to extra care—not in smashing, pounding, and packing the ice—but in placing something like a fixed roof over it. Whatever theory may say, practice would seem to affirm, that a thorough thatching of materials that yielded and kept pretty close to the ice as it shrunk into smaller dimensions was the best for keeping it from melting away. As just now there is plenty of ice and snow,—and as ice is not only a luxury, but most useful, in a medical point of view, in those fevers which often afflict even our villages,—many of our farmers and amateurs may wish to have a cave of ice not far from their own residences. Snow is just inferior to the best ice, because it does not go quite so compactly together. The best mode is to roll it into huge balls, and this compresses it, and then wheeled or carted to the mound, well pounded, and a little water added to increase its solidity, it will be difficult to find any difference between it and fresh water ice when taken out for use. There is something so exciting in getting these huge balls rolled, that you may calculate upon every young urchin within reach giving a helping hand.

PROTECTING PLANTS.

The whole theory and practice of this has frequently

been discussed. Just as last year, if the frost should continue any time, all outside vegetation has received the best of all protecting mantles. It requires a very severe and long-continued frost to penetrate through a good covering of *snow*. This is chiefly owing to two reasons: the white colour of the snow prevents it either absorbing or radiating heat freely; and the looseness with which the feathery-like particles are piled upon each other encloses such a body of air, that it becomes a good non-conductor of heat;—in other words, the heat in the soil is prevented escaping into the atmosphere. Wherever, therefore, the temperature is so low, be it in cold pits, or cool greenhouses—say a few degrees under 40° rather than above it—the plants will not be injured by the comparative darkness, the result of a roof being covered with snow; while, however severe the weather, they will obtain a better defence than a multitude of littery mats could give. An amateur not long ago called our attention to his getting the snow removed from a range of cold pits, that he might put more mats on to keep out the cold. The three inches of snow was a better protection than three or four mats; and if the plants were *not* growing much before, and if the temperature within ranged from 33° to 38°; and if the frost continued as long, they would receive no injury if the snow covered them up for a month. In such circumstances care must be taken that the enemy did not steal in through the back and front walls. Where linings are not used, nothing is better for such a purpose than a thin layer of straw tied neatly to the walls. I have, in extreme cases, before now, where litter was next to impossible to be had, and the frost intense, been glad to throw quantity of snow against the walls to keep them warm. It is all very well for our somewhat poetic tradesmen to tell us of the miraculous virtues of *Frige domo*, asphalted felts, &c.; but it would require several layers of Frigi, and, very likely, some litter between them, to keep out the frost from a cold pit and the external air, some 15° below the freezing point.

The great advantage of loose, dry litter is that every unbruised tube is full of air, and every interstice between the particles of that litter is, also, full of air, and, therefore, presents us with air so far confined as to be a non-conducting body. Of course, whenever you have a sufficient heat within to cause elongation, such as from 50° to 55°, and upwards, it would not be safe to allow the covers to remain on during the day, unless the day was particularly cold and stormy, as the consequence would be weak and sickly growth. Even in the case of a Radish-bed, or a Potato-bed, where the plants are above ground, and the temperature from 45°, and upwards, uncovering would be necessary as a general practice; but if frost was likely to be continuous, and there were several inches of snow over the covering, and no sun inviting the imprisoned things to look at him, then the covering might remain on for several days, and all danger from damping and drawing avoided, by merely lifting up the sashes behind for an inch or so, during the warmest part of the day, just as long as the air admitted did not sink the inside temperature undesirably low. I am thus minute in these little matters, because many anxious amateurs give themselves much needless trouble, and put themselves, at times, to expense that might have been avoided. No plant will suffer in a temperature not so low as to injure it, but low enough to keep it torpid, and its vital powers inactive, though shut out from sun and air for a considerable length of time. I have frequently had Geraniums, Calceolarias, &c., covered up in a cold pit for a whole month, and not a bit the worse for it; just because they could not grow. In all cases, the change in the weather should precede uncovering; a slight shade for a day or two will be desirable, as sudden changes to plants, especially under artificial treatment, are hurtful.

WHICH ARE THE BEST COVERINGS?

The mediums for protecting pits, houses, &c., are occupying considerable space in these pages, and also that of contemporary journals. Some time ago, to meet the case of many inquiries, I went rather largely into the subject, and some wish to know if my views or plans have undergone no change. I cannot say that they have; though I am not so fortunate as to have wooden covers, I still think that for pits, houses, &c., they are the best, and by far the cheapest in the end. Next to these, I would place asphalted felt, firmly secured to a frame of wood, and the felt tarred afresh every second year, or rather every year. Straw-covers I use extensively, and just because I can get hold of the wood for the frames, and can manage to get the straw, without their forming an item in the garden bill; and because the repairing and making of them furnishes comfortable work for the men in-doors, in bad weather. The relative first, and ultimate expense of the various modes was attempted to be given in a previous volume.

So much are things judged of by the present rather than the ultimate expense, that these straw-covers seem coming into vogue. Models of them are even sent to be exhibited at our great societies; though I have used them for nearly twenty years, and have found that others had used them before I was in leading-strings; and, as useful things, in many circumstances, had long ago been recommended by myself and others. Full directions were given for making them. For fresh readers I here repeat the main points. Measure the length and breadth of the sash to be covered, so that in covering a pit the covers fit close to each other all the way along. Then to make a single cover, get three slips of wood one inch thick, and from two to three inches broad. Two of these form the sides of the cover, and one goes right in the centre. You will perceive that these three pieces will sustain the whole weight of the cover. Being set out to the requisite width, cross-pieces are nailed to these three longitudinal pieces, first at the two ends, and then at fifteen to eighteen inches apart in the intermediate space. This forms the skeleton of the cover. You now turn it upside down, so that all the cross-pieces are downwards, as these, independently of supporting the straw, keep it also at a distance from the sash. As it is desirable not to strain the three longitudinal pieces, these cross-pieces are only half the width of the long ones. The spaces between the longitudinal pieces are now neatly filled with straw; so that when firmly pressed it will be as thick as the longitudinal pieces, namely, one inch. The straw is put in so as to mix the upper and lower ends regularly. Then beginning at the middle of the corner, a tar-string is fastened to one of the side longitudinal pieces—opposite one of the cross-pieces beneath—is pulled firm to another tack in the centre longitudinal piece, and taken from thence to another tack on the opposite side piece. A string goes across, opposite every cross-piece of wood, until the hollow and upper end pieces are reached, when a cross-piece of wood is nailed on similar to the one on the opposite side, as being better for taking hold of when covering and uncovering than the straw fastened with a string. In a cover rather better than four feet wide, it will at once be perceived that there will be fully eighteen inches of string from the side longitudinal piece to the central one, and that space is too much to enable the string to keep the straw firm in the various vicissitudes from dryness to wet. In the centre of each of these spaces, therefore, a loop is put over the string, passed through the straw, and fastened firmly round the cross-piece on the under side. Firmness would at once be secured by placing cross-pieces of wood over the straw, similar to those underneath it, and I did so for some time; but then the covers were more expensive at first, and did not last so long; because, in the first place, they

were heavier, and strained the longitudinal pieces more; and, secondly, because in wet weather the wet lodged at the cross-pieces, and thus occasioned rotting there. I may add, that I like the straw to be drawn before it is thrashed. The soft ears are thus got rid of, and the straw tubes are not bruised by the flail or thrashing machine.

The other day, a young amateur was rather surprised at the outside difference of two small houses; and, as illustrative of the whole principle of protection, I will here narrate it for the benefit of others. Several inches of snow had fallen during the morning. In one part the glass was covered with a single layer of mats, the inside temperature was from 44° to 46°, but the mats were all wet, the snow melting almost as soon as it had fallen. In the other house the temperature was from 55° to 60°, and the glass was covered with these straw covers, and the wonder was that there was as much snow lying comfortably on these covers as there was on the surrounding grounds. Now, if it had been otherwise, if the snow had rested upon the comparatively cold house, our friend would never have hum'd and hal'd to find out the cause. I am well aware that there are many readers of this, and young gardeners, too, who could tell you in a moment why there was such a difference. We get told, now and then, that we do not write enough to amateurs of little experience; but I am sure it is their fault if we do not, for I hardly think they could conscientiously charge us with not attending to their wishes and enquiries as soon as these were made known to us.

Well, I must tell them, in a few words, how the coolish house melted the snow; and the hottish one allowed it to remain unmelted. In the first case, when the mat was put on there would in many places be a stratum of air between it and the glass, and a fair portion of air would be enclosed among the materials of which the mat was composed. But as the snow fell, it beat down the mat close to the glass, and the intervening air must run off as it best could. Then, the air inside, being warmer than the air outside, heated the mat next the glass, and that, again, melted the snow above it; and that, again, soaking the substance of the mat, in the shape of water, drove out the remaining portions of air, until the mat, like a wet rag, clasped the glass; and thus the mat and glass became as nearly as possible of one temperature, and the radiation of heat from them united would proceed almost as if from one body; and that heat would continue to melt the snow until the inside temperature became too reduced to effect that object.

Now, on the other hand, to prevent the styles and sash-bars being injured by the sliding up and down of the cover, laths are tacked on for the winter to the sides, or styles of the sashes, and these, when taken off and laid past in summer, show that the paint has been uninjured. Well, these laths, say a quarter-of-an-inch in thickness, or rather more, and the cross-pieces of the straw covers one inch in depth, or thereby, generally not above three-quarters-of-an-inch, and then the space from the glass to the top of the sash-bars, altogether make a space of about two inches of confined air between the glass and the cover; and confined air is one of the best non-conductors of heat. Then the straw itself, and every tube of which it was composed, was a non-conducting-of-heat medium. The fall of snow filled up every little interstice on the surface, and thus so far confined all the air from the surface of the covering to the glass. The snow being nearly as cold as the atmosphere, and from being white in colour, did but little to lower the cover by radiation. The under surface of the covering would at first be lower in temperature than the underside of the glass, and there would be a tendency to equilibrium; but the space between prevented the glass and the cover becoming

equalised in temperature, because, as heat was radiated from the glass to the under side of the cover, it would be radiated back again to the glass; and the air above confined in and between the tubes of straw, prevented the heat radiated to the under side being conducted to the upper side, so as to effect any melting of the snow there. In fact, though the mats were found wet the covers were dry. Under such a circumstance, less heat escaped into the air from the glass than if it had been covered with a solid wall of brick. The most inexperienced will now see, that what will keep heat in will keep cold out; and that, as a general rule, they will best gain their object in protecting their plants in glass-houses, by enclosing a body of air between the glass and the protecting medium. Much will also depend on keeping the glass dry; and I have often thought, that if such straw covers were lined on the upper side with a strong water-proofed substance, they would answer as well, though not be so lasting, as wooden-shutters, which, I have no doubt, will not only be found the neatest, but the cheapest mode of protecting such structures, when even ten years, not to say double that time, is taken into consideration.

PROPAGATING.

Many will now be thinking, "How am I to get a sufficiency for a bed out of that solitary plant that stands there?" This received great attention last year. Unlike autumn propagating, almost everything, whether for the greenhouse or the flower-garden, will delight in a help from extra heat at this season of the year. When so much has to be made of one or two plants, it will be necessary to commence propagating early, as several toppings of cuttings will have to be obtained. Where no such quantity from a small beginning has to be procured, the end of February, or the beginning of March, will be time enough. Whenever resolved upon, nothing is so sure to promote success as a sweet bottom-heat from dung and leaves of about 75°, and a top-heat of from 50° to 60°, hardening the young plants off as soon as struck. One reason why I recommend deferring to March is, that the plants are not so apt to be injured by being improperly used as those struck earlier, and room for them is easier obtained. R. FISH.

MESSRS. ARTHUR HENDERSON AND CO.'S NURSERY,

PINE-APPLE-PLACE, EDGEWARE ROAD, LONDON.

I had occasion to visit this far-famed Nursery a few days ago, and saw so many interesting plants, that I was, in a manner, compelled to take notes, and, as the poet Burns says, "I faith I'll prent them," for the benefit of that large class, "our readers."

The Show House is the first you enter, and it was as gay as you can imagine, with *Chinese Primulas*, *Jasminum nudiflorum*, an excellent winter-blooming plant, *Cyclamen coum*, *Rhodora Canadensis*, *Linum trigynum*, forced *Narcissus*, forced *Pyrus japonica*, *Eucris* of sorts, and various early-blooming *Heaths*, and a few late-blooming *Chrysanthemums*, all of the dwarf or Pomponé varieties. These Pomponés are the first to come into bloom, and the last to go out. *Camellias* look promisingly full of buds; many of them just showing colour. Many of our correspondents, who have lately complained of their *Camellia*-buds dropping, would learn a lesson by visiting this place.

In a long span-roofed house, I noted a fine stock of dwarf, bushy, New Holland plants, just the right size to commence to form specimens.

In the Stove, the following plants were in flower. *Tillandsia amana*, a dwarf Pine-apple-looking plant, with

blue, yellow, and scarlet flowers. *Bilbergia Morelliana*, another interesting plant belonging to the same tribe, with green foliage, and white, mealy bands across each leaf. The flowers are produced on a drooping raceme, and are of a brilliant purple, white, and crimson colour. *Aphelandra squarrosa*, a rather new plant, producing a spike of yellow, fleshy flowers, in a squarrose style. This is a good addition to our winter-flowering stove-plants. *Bilbergia miniata*, a very dwarf species, with several spikes of scarlet flowers. *Camu Warszewiczii*, a new and very ornamental species, with spikes of rich crimson flowers, which are produced at least nine months in the year. The beauty of this plant is greatly enhanced by its purplish-red stems, ribs of each leaf, and edges of the same. It is an ornamental plant of itself, without bloom. Most of the fine-foliaged plants have but poor flowers; but this is a beautiful exception.

Messrs. Henderson possess a large collection of exotic Ferns, which are very well grown. One was pointed out to me as new; it was named *Platygloma Brownii*. It is, I suspect, a New Zealand Fern. It is bipinnate, with rather large, conspicuous pinnæ, edged broadly with a continuous row of seed-vessels. Of it I may say, it is a truly desirable species, and ought to be in every collection. I expect it will be found hardly enough for the greenhouse.

On a wall, at the outside of this Fern-house, there is a large, splendid plant of the *Jasminum nudiflorum* completely covered with its yellow, shining blossoms; but I fear these sharp, north, frosty winds that are now blowing will spoil its beauty.

In a span-roofed Propagating-house, I was shown some new, highly-interesting plants, especially new Conifers. One looked very much like a tree *Lycopodium*; it was named *Arthrotaxus selaginellioides*. If this proves as hard as its name, it will be a great acquisition; it is the most distinct plant of the tribe I ever saw. Also a Conifer, named *Chamaecyparissias glauca*, from the hills of India. This is in the way of *Cupressus torulosa*, but much stronger in all its parts. It is doubtful whether this will be hardy.

In the Orchid-house, which is a new one since I was at Pine-Apple Place, there were not many blooms. The fine, winter-flowering *Oncidium ornithoglyphum* had several spikes of its sweetly-scented blossoms; and I noted also another *Oncidium*, name unknown, in bloom, which I strongly suspect will prove to be *Oncidium Galeotii*. The rose-tipped *Sobralia decora* had several blossoms expanded. This species, though each individual flower only lasts a day or two, yet produces so many in succession that it is almost always in flower. The Orchids generally, I am happy to say, are looking remarkably healthy, especially the Indian species and the genus *Cattleya*. Of the latter genus, I noticed several lately imported that are strange to me.

At the further end of this house there is a group of stove shrubs, remarkable for their beautiful foliage, namely, the new and rare *Dammara Brownii*, from the South Sea Islands; also a fine specimen of the large Fern-like-leaved *Jacaranda filicifolia*, and the *Lihopalma magnifica*. This is a large house, and the plants in it are arranged in groups of genera, which is a useful arrangement, showing the natural affinities of the different species. Here and there a plant is placed in flower to give a cheerful aspect to the otherwise strange appearance of the Orchid tribe. One plant, the new *Hebeclinium aurantiacum*, had quite a gay appearance, with its golden-hued blossoms. I noticed two plants of the rare *Imatophyllum miniatum*, showing a head of flowers each. Our readers will remember Mr. Beaton's florid description of this new and rare plant, as exhibited by the Messrs. Lee, in Regent Street, some twelve-months ago.

From this house I wended my way to the Greenhouse Specimen Plant-house. Here are numerous New

Holland plants, such as Boronias, Eriostemons, Leschenaultias, &c.; all perfect pictures of artistic skill, and in luxuriant health. Every young gardener should see this house and its contents; it would be a lesson in plant-culture to him worth a 200 miles' journey to see and learn.

Heaths, of course, were in good health. This Nursery has been famous for them for the last half-century. In the Heath-house there is a border, and in that there is planted my friend Beaton's favourite plant, the *Lapageria rosea*. It flowered well last summer, and is now sending up a stronger shoot than ever, and will most probably flower well next season.

T. APPELBY.

WOODS AND FORESTS.

THE COMMON LARCH.

(Continued from page 241.)

Two hundred years ago this very excellent timber was scarcely known in our plantations. I have read somewhere, that the Duke of Athol, at Dunkeld, in Scotland, had two young plants sent him from abroad. They were potted, and kept in a greenhouse through the winter, and in the spring were planted out in the flower-garden in front of that greenhouse, where they grew rapidly, and attained nearly 100 feet in height, producing plenty of cones and ripe seeds. From the progeny of these two trees the plantations belonging to the noble and patriotic Duke were planted; and, now, probably, the descendants of those trees have clothed many of the Scotch mountains with timber. I have no doubt, in time, the Deodar, which may be called the evergreen Larch, will multiply as rapidly, and will be planted as largely, as the Larch.

This valuable tree is a native of the Alps of Europe, and is found in the highest perfection, as a timber tree, on the north side of the mountains. From this circumstance, it is the very best tree we have to plant in similar situations; and many a bleak, craggy, wild scene among our hills and mountains, where any other tree would scarcely exist, might be clothed and rendered useful, affording shelter to the lower lands, as well as adding greatly to the national wealth. Though this has been done to a considerable extent, yet there are thousands of acres in England as wild and as barren as they were left at the time of the deluge. In Scotland, I believe, more of this tree has been planted within the last century than in any other country in the world. In my various journeys through Derbyshire, Yorkshire, Lancashire, and North Wales, I have viewed many a barren mountain side with the longing eyes of a planter, and pictured in my mind's eye how I could improve the appearance of such barren scenes if I had authority from the owners to plant them with Larches, or any other suitable trees. Alas! I am afraid this horrid war has already, with its vast expense of blood and treasure, put, in a great measure, a stop to such improvements.

It is only in peaceful, prosperous times that proprietors turn their attention to improving their estates; and by so doing, transmit to their descendants a country more valuable, more productive, and greatly enhanced in beauty. Had the Emperor of Russia spent half the wealth he has squandered in gratifying his insatiable ambition in improving, planting, and draining his country, setting thereby a glorious example to his nobles, Russia would then have been truly a powerful nation, and men would have blessed his memory. We can only hope that as men are better educated, and knowledge of their true interests increased, that they will see and feel the evils of war, and so earnestly value

the blessings of peace, that they will make almost any sacrifice, in reason, to ensure its continuance.

The timber of the Larch is quite equal to the best foreign deal. This fact has been repeatedly proved; indeed, it is so well known that I need not insist upon it. Poles of this tree make good masts for ships, sides for ladders, and excellent gate posts and rails; for these latter purposes they are more excellent even than Oak, because they bear longer, before they decay, the alternations of wet and dry, especially if the bark be left on, it being more incorruptible than the timber itself. (I have used the bark as a covering for the back of rustic grottoes, and have found it to last, in that situation, more than twenty years.) The bark has the tannin principle very strong, though not quite so much so as the Oak, yet in sufficient quantity to render it highly useful to the tanner; and there is this advantage, in stripping off the bark the timber is seasoned thereby.

Monteith, the author of "The Forester's Guide," says, that he finds the disbarking of the Larch the most efficient way of seasoning the Larch timber. We barked some (by way of trial) in the spring, and did not cut them down till autumn, and others stood in their peeled state for even two years. After various trials, he is decidedly of opinion, that the Larch treated in this way at thirty years of age will be found equally durable with a tree cut down at the age of fifty years treated in the ordinary way. This being the case, the owner has by the practice the profit of the bark, whilst his timber is at the time improved.

Another great merit of this tree is, that it is valuable at any age. Every gardener knows the value of Larch stakes for his Dahlias and other flowers requiring such support. Though rather expensive, near large towns away far from the Larch plantations, yet their indestructible properties renders them cheaper in the end than any other kind of stake. I have had Larch stakes in use for four years, whilst Oak ones were quite rotten in two. Then, again, the Larch makes excellent rustic fences placed crosswise, in this manner **XXXXXXX**. I have seen such fences with the bark on more than twenty years old. When used as a game fence, to keep out the hares and rabbits from an American garden, in a wilderness scene, they are far more picturesque and fitting than one of wire. Hurdles wattled with Larch spray, thickly put in, make a good shelter from the north winds of winter. I have seen pits even formed at the sides and ends of such a material, with such hurdles for a cover, together forming a good winter shelter for many half-hardy flower-garden plants. In its native habitats, the inhabitants draw large supplies of turpentine from the Larch; but as we need timber more than that substance, I need not dwell upon it as one of the uses to which we may devote this tree.

One use more, and I have done; that is, as a nurse for other trees. No other tree is so well adapted for this use, because the Larch will grow in almost any soil not positively wet, and it shelters the young Oak, Ash, Beech, or Elm, without tendering them too much, as the evergreen Pines would do; besides, the annual fall of the leaves of the Larch enriches and increases the soil very materially. I might enlarge upon this point much, and state, without fear of contradiction, that a plantation of Larches not only clothes the mountain with wood, but also, in the course of ages, with soil, perhaps more so than any other tree.

I may, I think, conclude, that from the various uses to which the Larch is applied, its proved perfect hardihood, its facility of increase by seed, so much so that seedlings of this tree are cheaper than those of any other, and the great value of its timber when fully grown, there is no tree that recommends itself so strongly to the British planter at the present day. Other foreign trees, such as the Deodar, may, at some

future day, dispute the palm of excellence; but now, the Larch, considering every point, including usefulness and cheapness, claims the first rank as a national tree.

T. APPLEBY.

(To be continued.)

AMATEUR FARMING.

"A SUBSCRIBER to THE COTTAGE GARDENER from the beginning," having complained of being overcharged in some work he has had done in cultivating a piece of ground, and as his case may not altogether be a solitary one, I will make it the subject of the present chapter: and although I am in possession of certain facts bearing on the case above, yet it will be necessary to make certain suppositions, to supply the remainder of evidence; at the same time, nothing will be added but what is likely to be sustained by the generality of cases.

In the first place, we will suppose a gentleman retiring from town or commercial pursuits to some pleasant abode in the country, and, probably, in a village. To his dwelling he is anxious to add the luxuries of a garden; and, looking further away, is also ambitious to have a small plot of land on which to exercise his agricultural notions, which, in all probability, are then only in embryo; or, at best, his ideas on such matters are supposed not to be of greater age than his abode in the place he then occupies; but having relinquished active business pursuits, he wants a something to do—a something in which to occupy his morning walks; and, probably, a small field becoming at liberty, he secures it, regardless of cost, with something like a hope of exultation at the brilliant example he will be able to show his neighbours. This, perhaps, may be an overstrained picture, yet such occurs more often than many are aware. So mark the result.

Our worthy friend having obtained possession of the field, sets about its cultivation in earnest, and after looking at it dozens of times, and probably asking the advice of all the parish, at length finds out that horses are a necessary part of field labour, and working horses not being any portion of his establishment, he feels he must have recourse to hire. This, alas, is sadly against the hope of making such an undertaking a profitable one; for farming, like manufacturing, must be done on a scale of certain extent to pay, and those who have to hire horse labour can hardly ever make it do so. This, however, brings us on to another stage of the proceedings.

Leaving our worthy friend to settle with a neighbouring farmer the precise time when his little holding has to be ploughed, as well as the terms on which it is to be done, we will suppose him to have another small field, as well as this tillage one, in which he keeps a cow, and, perhaps, a pony. Now, in the plans he has in view, it is likely he wishes to work the two together in such a way as to derive the most benefit from both. His cow wants food in winter as well as in summer, and if, in his arrangements, he can so contrive the cropping as to effect that object, his purpose is served; besides which, the wants of his table have also to be consulted, and if the district be a favourable one, a more than usual proportion of Potatoes may not be altogether an unprofitable speculation. All these considerations must be borne in mind when the cropping of the arable field takes place, or rather when it is preparing to be cropped, for the plans which decide its cropping ought to be well considered and decided upon some time beforehand.

It will usually be most prudent to have two or more crops in the field at once, for the quantities wanted of each not being large, a greater variety may be obtained. Thus, for instance, if the spring be far spent

when the tillage of the field is complete, it would not be prudent to plant many Potatoes, because these ought to be put in early, but there is plenty of time for the other root-crops—as Mangold Wurzel, Carrots, Swedes, &c., and as these are all valuable as root-crops, a fair proportion of each ought to be sown, and duly attended to, in order to have that supply in winter which is so much wanted. It would be superfluous giving directions here which of these to sow most of, because local circumstances usually determine that, for it is not every piece of ground that will grow them all equally well. The long Belgian Carrot, for instance, requiring a much deeper soil than will often produce a fair crop of Swedes. Mangold Wurzel is a root that grows more above ground, yet the long kinds of it require a generous soil; nevertheless, it will grow on all kinds middling well, only it need hardly be repeated, that when the long Carrots, or long Mangold Wurzel are grown, the manure that is put in, if of a bulky kind, ought to be buried pretty deep; but if it be of such kinds as guano, or other manures which take up but little room, its being worked in near the top will do no harm, as its presence there is not so likely to entice the roots to remain near the surface, as a patch of unctuous dung at the same place would do, occasioning what is called "forked roots," i.e., a subdivision of the main leaders into two or three useless short tubers, and a coarse, useless, head or top. To avoid this, the manure for a root-crop had better be worked into the bottom of the trench than remain near the top, except as above, when it is in a consolidated shape, or when it is of a soluble kind; in the latter case, natural causes will send it down. However, as the description of manure often depends on local circumstances, it is right to mention, that for very stiff, heavy land, lime or chalk, in a liberal quantity, ought to be given in preference to guano and other chemical manures, which can only be administered in small quantities. It is also advisable to give light, sandy, or gravelly soils only such manures as serve the purposes of the current season, for such soils do not retain for the use of another year the unexhausted powers of manure so well as a stiff or more retentive one. A soil, resting on chalk, is usually more stiff than one having a sand, gravel, or stony subsoil, and the pale colour which chalk gives it prevents the sun heating it so much as it does one of another description. But all these peculiarities do not render good cultivation, in the shape of ploughing or digging, one whit less necessary; on the contrary, the only advantage to be derived in that way is from a propitious season, say like the spring of 1854, which favoured the working of soils very much. The other features must be left to local circumstances.

Having determined on the description of crop, and the proportion of each, let the ground be well worked over several times in dry weather, and all weeds and other rubbish be taken out, and the seed ought to be sown at proper times, which for White Carrots ought to be about the middle of April; while Mangold Wurzel and Swedes need not be sown until the first or second week in May; but much depends on the character of the spring; if cold and wet there is no immediate hurry; but if it be dry, and the prospect of remaining so, lose no time in sowing the seed whenever a shower occurs after the third week in April; for it sometimes happens that the season sets in dry, and there is great difficulty in getting small seeds to vegetate. Turnips are worse in this respect than Mangold Wurzel, but both are bad, especially if the land on which they are sown be rough; for the rough knobs or lumps of earth, allowing so much of the drying air to circulate between them, the seed withers rather than vegetates; while in a finer, or more mellow medium, there is always moisture below capable of rising, by capillary attraction, sufficient to meet the purposes of germination; at all events,

it is more prudent to adopt a fine surface-tillage than a rough one, except in autumn, when Wheat may, perhaps, be benefited by large lumps being left unbroken at the top; for the mellowing of them down in winter helps to cover the roots, serving as a sort of "earthing-up;" but the amateur need not provide this for summer-culture; his purpose ought to be to obtain a good, healthy plant as soon as he can, and the after-treatment of thinning, hoeing, and such like, will be the more pleasant by having plenty to deal with. These things, however, will be treated in their turn.

Although the above has been written to meet the case of an amateur, who complains of having been imposed on by those to whom he delegated the working of his small field, yet, others similarly circumstanced, may be in a like predicament. One thing it is right to say, that very small holdings seldom pay except in the hands of those who do the working part themselves; and as such small plots as amateurs occupy are generally cropped more with a view to supply the wants of the owner than with a strict regard to profit; the latter must not be looked for too closely, but it is right here to say, that after a root-crop, corn is generally sown with the land's receiving only one ploughing; and as this is not an expensive crop in the labour it involves, it generally pays the cost of the former one as well. Our friend had better well weigh this matter; and though we will not promise him a successful issue to his second year's produce, it will go far towards doing that.

Other articles in *THE COTTAGE GARDENER* will shortly appear, bearing on cases like his; in the meantime, let him take comfort by the reflection, that the coming year will be one incurring but few expenses on his part, while the returns (if the season be at all propitious) may be expected to be good.

J. ROBSON.

ALLOTMENT FARMING.—JANUARY AND FEBRUARY.

A HAPPY new year to all our readers, great and small; and may peace and plenty, with a high spirit of industry, attend their progress to its very close; when that period arrives, may they be able to look back on the past without remorse; and with a thankful heart enjoy their Christmas cheer.

The present are most eventful times for all, from the Queen to the most humble cottager. All, I believe, so love our good old country, as to possess a strong desire for a cessation of the dreadful war, providing it can be attained with honor to this kingdom, and the other civilised nations of Europe.

I must candidly confess, that at this period—the middle of January—I may appear, like some of our railway trains, overdue in my few trifling remarks on those things concerning the allotment and the cottage gardener; and it is so; but let us make up for lost time, by taking into consideration, not only the business of the declining portion of January, but also the early part of February; for then gardeners will throw off their slumbers, buckle on their armour, and take the field in earnest.

So much for apology; now for real business.

ARRIARS.—Under this head, as concerning the present period, we may place the following:—Drainage, Trenching, Ridging, and Improving waste plots. To repeat the arguments for drainage is unnecessary; depend upon it land that holds water too long will never carry out the best objects of the cultivator. Draining is yet practicable, and will be until the middle of February, when we must begin to think of preparing the surface for spring cropping. Trenching I have so often recommended, that I would simply again urge my recommendation of this practice on every plot at least once in three years. Ridging may, of course, be applied to the trenching, or digging process, and in either case it is of much benefit.

Improving waste plots may not, very generally, concern the gardening cottager, or allotment holder, but may be just pointed to. I call the following, in their cases, by this

name—overgrown hedges, or boundaries, old corner pieces, hitherto thought of little value, overwide pathways, waste headlands, and, to use a common phrase in these parts, "tea-pot nenks," which, although a low phrase, is tolerably expressive of broken mugs, plates, &c.; and which, when harboured in one spot, and gradually, by neglect, occupying a wider compass, speak as plain as by-gone mugs can speak of carelessness and slovenly habits. Need I observe, that such is not the place to look for progress. It is akin to the practice of stuffing a dirty rag in the place of an absent pane in the window; and in such cases, I fear we may look for undarned stockings in-doors, and for dirty and rusty tools lying here and there without.

And now how is the manure-heap, that all-important affair? In the first place, had you so thrown it together in November as to exclude rain and snow? Have you seized occasions to turn and divide clotted and unequal portions? If not, pray bear it in mind.

STORE PRODUCE.—Of course these have been secured before now; take a peep at them, however, and see if any rot prevail; if so, let them be turned. *Potatoes*, especially, must be well examined both as to seed and eating *Potatoes*. *Onions*, too, must be watched a little; and towards the middle of February the remaining *Parsnips* in the soil be trenching out. *Apples*, too, should be picked carefully, and if in some dry place and beginning to shrivel, they should be covered closely. Exclude both light and air.

SEED-BEDS.—By this I mean your stores of *Cabbage*, *Lettuce*, *Cauliflower*, and other little matters, provided by a wise anticipation for spring planting. Little protection has hitherto been needed, but we have not parted with the winter yet; let us not be betrayed at the eleventh hour.

RHUBARB.—Those who desire to have this early should cover the crowns with some open litter, or get chimney-pots and such-like over them, and if they have a little hot manure they may pile it round them.

PRUNING.—Some of our worthy readers have, doubtless, a few Gooseberry or Currant bushes in their little gardens; now is the time to prune them; and I will offer a few simple rules for their guidance. Thin out *Gooseberries* much in the centre of the bush; thin also the exterior, so that the young shoots would be, on an average, two or three inches apart, and, of course, throw all the bearing powers of the bush towards the exterior; this will save trouble in gathering, and produce finer fruit; shorten the ends according to the condition of the wood. *Black Currants* bear best on the young shoots, like *Gooseberries*, and require similar thinning, but rather avoid shortening them, as it induces too many side-shoots and suckers, which rob the system of the bush.

Red and White Currants must have all the side-spray cut back to within an inch of each main branch, and in shortening the leading shoots leave about four or five inches annually.

PLANTING.—Those who wish to plant fruit-trees or bushes, and have not done it in November, should wait until the opening part of February.

SOWING.—Little of this at present. Early *Radishes*, and very early *Peas* may now be sown at any open period.

Finally, let those concerned take into consideration the great importance of using every spare hour, while the busy season is advancing, of carrying out all they can as to the forenamed maxims; when March arrives, they will find a much greater pressure, and their hands tied as to improvements. The mere cultural operations of that period will be found enough. It is astonishing what the soil will do if handled with a little sense, and, above all, with industrious perseverance.

R. ERRINGTON.

NOTES FROM PARIS.—No. 6.

CONSTRUCTION OF FRENCH BOUQUETS.

IN a former article, I entered on the consideration of this subject, and described the general principle of making up a bouquet; but my observations had reference only to flowers with stalks of a certain length. The process of tying the flowers together in the manner I have described will be readily understood, and duly appreciated, by all interested in

the question which Mr. Beaton has raised. But we must not forget that there are many flowers which would wonderfully add to the effect and beauty of a bouquet, but which are either stuck in loosely on the surface, or altogether rejected, because they have no stalks by which they may be attached in the ordinary way. Every person who has attempted to construct a bouquet with some degree of taste, must be able to call to mind a number of little disappointments, while making a tour in search of flowers, which are only to be explained by the circumstances now noticed. Very often, indeed, the freshest and prettiest flowers must be passed by, simply because their stalks are much too short for the purpose of a bouquet. But the Parisian flower-dealers surmount all obstacles of this kind; for if their flowers have no stalks of their own, they are provided with artificial ones, which answer the end desired just as well. Indeed, it is astonishing to see with what scanty materials a flower-girl here will construct a bouquet in a very short time. If her flowers have stalks, good and well; if not, it is all the same. This point does not affect the character of her bouquet, or make it less capable of being tested in the way I suggested in a former dispatch. What some bouquet makers would leave to be thrown away, after finishing their work, would be good enough for her to sit down and make such a bouquet as might surpass theirs.

In beginning to make her bouquets, the French flower-girl provides herself with a bundle of what she calls "Spanish Rushes," a species of *Juncus*, remarkable for its close tissues, a circumstance which imparts to it much strength when dried. It is but little thicker than a common knitting wire, but as stiff and tough as a dry osier twig; of the same thickness, or perhaps thicker.

These rushes are said to be imported from Spain, and the flower-girl has to purchase them at so much a pound. Thus provided, she sits down to her table, on which are placed the flowers according to their kind, also several parcels of fine string of different lengths, and a small basin of water. The flowers at present before her, it must be recollected, have but very short stalks, and in most cases no stalk at all.

She has taken up one; it is a mere fragment broken from a panicle of Lilac, at the same time she has doubled one of the yellow rushes. The flower is placed at the point of doubling, and with a thread, secured in such a way as to keep it from slipping off. The thread, in short, is passed under the loop formed by the doubling of the rush, which in this way explains itself. Two or three turns of the thread are sufficient till the point of connection between the flower and the rush is covered with a tuft of green mosses, the heads of which are brought up to the first or second blossoms, when several more turns of the thread are given, ending towards the bottom of the stalk formed by the doubled rush, where it is tied. Here we have a bouquet in miniature; and the flower-girl, with well practised fingers, has completed it, *dipped it in water*, and laid it down in one-third of the time I have taken to describe the operation. While she is going on with others in the same way, suppose we make an acquisition of the one just made, and examine it a little. In the first place, it is very neat; a small head of pale Lilac, and a high necklace of deep green Moss, the individuals of which are themselves models of symmetry. It is neatly and securely tied, and the stalk is about ten inches long. It has been dipped in the water evidently to moisten the moss, in order to keep the blossoms all fresh; while the moss itself prevents the thread from pressing too tightly on the soft, short stem of the Lilac.

But now the flower-girl has already prepared more than a dozen of other flowers of different sorts and colours in the same manner, and she proceeds to make up her bouquet with them, as she would do with so many flowers having natural stalks, lacing them together until they are all used one after another. When the bouquet is completed, you would never suppose, to look at it, that the flowers of which it is composed are only mere fragments tied together, or that the entire flowers have only stalks two or three inches long. Yet, here we have a beautiful bouquet, eight or ten inches in diameter, and with a handle no thicker than one's thumb, a feature of no inconsiderable importance in hand bouquets of any size; for where the flowers have all their

own stalks the entire length, it is difficult to prevent the handle from being inconveniently bulky. Of course, when there are flowers with suitable stalks, in point of length, the rushes are not used; though it will sometimes happen that the stalks are too thick or clumsy; and in that case, they are broken off at the lower part, and rushes tied to the flowers. But the principal use of these auxiliaries is to form stalks to such flowers as have no stalks, or whose stalks are too soft or too short. In this way, if the flowers are pretty, or otherwise suitable, they are deprived of all plea of exemption from active service on account of defective limbs, and when duly equipped they make as good a turn out and last as long as their more robust comrades.

Bouquet-making, here, is like any other, a distinct trade, that is to be learned only with practice. Even in the flower-markets, the stalls of bouquets are separated from the stalls of flowers and plants in pots; while these are both separated from the dealers in bulbs, roots, soil, pots, boxes, &c. In this way the trade is divided, and sub-divided into several branches, where long practice and study have produced a corresponding amount of dexterity and good taste. The flower-girl, whose business it is to make up bouquets, day after day, all the year round, displays as much alacrity of touch as a skilful performer in any other art. She has learned all the colours and their supplementary tints which produce a certain effect in combination. She has studied the forms which every description of bouquet requires, and she can tell with unerring exactness the particular sorts of flowers which she will be able to obtain at any given season. She can run over a mental catalogue of different styles and sizes, and no sooner does she choose the central flower of a bouquet, than all the others which are to surround it are at once determined, in the same way a musician fingers his chords according to the key he has struck. But she carries the refinement of her art beyond the mere mechanical sphere of its existence, and pays court to the lovers of sentiment and poetry. Is the lady for whom the bouquet is intended a bride, or just lately married? Then the flower-girl will make your offering smell of Citron groves, and speak the language of purity and innocence. Is it the birthday of a mourner you are about to celebrate? Then weeping Daffodils, Cypress, or Wallflower, will form a considerable part of your bouquet. In short, if there is any noticeable incident connected with the present fortune of the lady for whom the bouquet is intended, you have only to mention it, and the flower-girl will contrive to embody the silent expression of an appropriate sentiment in the flowers which she selects. If none of the bouquets already made are suitable, she will construct one in a few minutes, for the materials are all prepared, and she has only to put them together.

Is it wonderful that the French bouquets are so pretty, or that the duties of the flower-girl include so much finesse and talent? The Parisians live, move, and have their being amongst flowers. The cradle of infancy is decked with bouquets; the baptismal font is turned into an aquarium. The young communicants must go to church with wreathes of Orange-blossom; the child who is awarded a prize at school must also receive a bouquet, or be crowned with flowers. Flowers envelope the *billet doux* of the lover; and at the hymeneal altar they are the tokens of consummated affection. In Church they decorate the precincts of the Cross, and are strewn at the feet of the Virgin, their perfumes thus mingling with the "sweet smelling savour" of the faithful's prayer. No splendid festival, no pompous ceremony, no humble merry-making, is considered complete without a profusion of flowers. Every day is a birthday, and every birthday is a *jour de fête*, consecrated to social enjoyment, and the parade of bouquets.

But to return to the "Spanish Rushes," called here, *Jones d'Espagne*. I am unable, at present, to ascertain whether their strength is natural to them, or whether it is the result of particular treatment after being gathered; it may be difficult, however, to find anything better suited for the purpose of making bouquets. The stalks of *Spartium junceum*, or of the common Broom, might be substituted with partial success; some fine varieties of Osier might also furnish suitable twigs. None of these, however, can be so good as the rushes used by the flower-girls here; and, surely, at the present day, the nurserymen round

London, or the dealers in Covent Garden, could have no great difficulty in obtaining a supply from Paris.

In winter, when flowers are scarce, the art of tying or preparing them in the manner of which I have noticed makes a great saving in the materials, for a panicle or a spike may be thus made to yield nearly a dozen distinct flowers; and in many aggregate flowers the lower blossoms, being first expanded, may be taken off without serious detriment to the upper parts. Several blossoms may also be tied together to form one flower, either in a round, flat, or elongated form. There are many rare and singular flowers, too, which it is impossible to gather with stalks more than an inch long, and when it is desired to make use of these in a bouquet, the tying process solves all difficulties. The Parisian flower-girl's success in bouquet-making is owing, in a great measure, to the pains which she takes in the preparation of her materials; she is always trimming or forming her single flowers, and arranging them according to their various colours; for colour is her principal study.

The Moss used, a species of *Polytrichum*, is plentiful enough in woods and hedge-rows; but this is most commonly employed with flowers having but little stalk, and moistened with water to keep them fresh. But common Heath, Boxwood, Thyme, Myosotis, or, indeed, anything else in the same way may be used; for the object is not merely to keep the flowers fresh, or protect them from the pressure of the string, but also to set off the particular colour of the flower, which may be thus likened to a precious stone set in gold, or a sparkling idea clothed in eloquent words.

Next to the Moss, which prevails during the winter months, the Forget-me-not, and common Speedwell, are very popular. But the clever bouquet-maker is not confined to a particular colour for the purpose of adding to the effect of the others which are to form the principal display; though green and blue, for obvious reasons, are most frequently selected for the purpose. I have even seen Parsley and Carrot leaves used with considerable advantage; but I only mention this to show that there is no limit to the range of admissible subjects, so long as the desired object can be attained. Anything that will produce the effect wanted can never be too vulgar; and it must be recollected, that these auxiliaries are always subordinate to the more striking colours. Sometimes, indeed, this principle is apparently reversed, and Roses, Dahlias, Asters, Tulips, Ranunculi, or African Marygolds, are surrounded with bright scarlet Verbenas, rich crimson Violets, yellow Crocuses, blue Gentian, or other small flowers having good, decided colours. The *Gentiana acaulis*, owing to its short stalk, is never seen in English bouquets, but in the hands of the Parisian flower-girls it makes a striking circle round a large flower, and it is also sometimes used as a centre. In the latter case, several flowers are tied in a cluster to one of the rushes, and the warm, rich blue colour may be softened by a circle of Myosotis. The practice of enclosing the larger flowers in circles of smaller ones, in the manner noticed, is chiefly applicable to what may be called the circular style of bouquet; because, in that style all, or nearly all, the principal flowers are thus enclosed by a circle of smaller flowers before they are used. The general outline of a bouquet formed according to this arrangement is somewhat flat; at least, there are no spikes or panicles rising above the other flowers, as in the "mixed style," or the "bouquet au naturel." This bouquet is, in short, composed of circles, whose centres are formed by larger flowers, all agreeing with one another in colour and position; and while it is particularly suitable for flowers with short stalks, it affords much scope for the display of taste and skill in distributing the colours, and in placing the circles so as not to break one another. Modern horticulture condemns the practice of crowding plants together in a conservatory in order to have a complete collection; and the practice of putting a bit of everything in a bouquet is equally open to criticism: unless, indeed, the object is to fill a large vase, or scent a saloon, a bouquet should be confined within certain limits. In any case, there must be no packing or pressing the flowers together with any of the French models. Flowers, to be sure, are beautiful under all circumstances; but when bundled together in a heap, requiring to be held with one's two hands, they become

inconvenient, and really do not produce so much pleasure as when well selected and neatly arranged on a more moderate scale.

The charm of a French bouquet is its lightness and the tasteful arrangement of the colours. Comparatively few flowers are used, but they are well-chosen and neatly put together.—P. F. KEIR.

GROWING POTATOES IN JERSEY.

If any individual has a piece of ground which he does not know exactly what to do with, after he has broken it up, be it sideland, cōtil, flat, dry, wet, peaty, loamy, or what not, he almost invariably decides, or is, by some of the surrounding influences, induced to plant it with Potatoes; the prevailing opinion being, that it is not only the best crop for a newly-broken piece of ground, but that a crop of Potatoes may be procured where there is an improbability of any other crop succeeding. So piece after piece is broken up, and as the cultivated portion is increased over the surface of the island, so is the increased proportion of Potato crops. Early Potatoes constitute a "valuable crop," as a large produce is generally obtained when they are planted in ground which is naturally adapted to the purpose, or is artificially made so, i.e., light and open. The second early varieties are also so from the very high prices of provisions and other influences combined. The cultivation of the later varieties, since the unfortunate seasons of 1846 and 1847, has been, in a great measure, discontinued, from the numerous losses sustained by those persons who perseveringly continued their culture, with a desire to maintain the credit of the cherished island of their adoption, or birth, for the produce of the "Jersey Blues" and "Jersey Whites," so long and so deservedly well-known in the English markets. I cannot help thinking, that the wiser and the better plan would be to resign the "credit" due to that source, and endeavour to establish another and a better on some other grounds; and it would seem that it is already arranged that it should be so, by, as it were, a sort of general assent, and that, henceforth, "ours" is to be the land of early Potatoes, and one of the numerous tenders to the London market supply.

The great demand for early Potatoes has been amazing, and continues to be so, owing to the crop having been so remunerative last spring, the late frosts in England having so seriously affected it there; and this island having been free from any excess of cold weather last spring, the produce was good, the price high, and the demand great; so great, indeed, that every available article in the shape of empty flour-barrels, boxes and baskets, were purchased of the tradesmen in St. Heliers for the purpose of packing Potatoes in, opening a new source of remuneration for the industrious, who have selected, or who occupy, Jersey as a place of residence, and offering the greatest inducements for the continuation of such a profitable employment of land and labour.

This article is prefaced with these few remarks, because I am desirous that as much information as I can impart should be communicated to all interested in this "pretty island," so little cared for, and often so much abused by the visitors to it. They couple the inhabitants "en masse" with the beauties, the fertility, and the advantages; and having done so without any sort of "pomparlers," they condemn the lot "en gros." They weigh the reality against some "magnified sport of imagination," and finding the beam does not maintain an horizontal plane, through the weight of "imaginative magnificence and multiplied advantage" counterbalancing reason, condemn the weaker or uplifted portions, without first weighing the value of their own "premature judgment." I fear that the readers of THE COTTAGE GARDENER will be inclined to consider that the state of *furor* my earnestness sometimes induces me to display in the articles I pen for their interest and amusement, and wherein the interests of this "island" are concerned, may be compared to that of a "Mormon Elder" lashing himself into a state of desperation, so that he may be enabled to call into action all the strength of language his tongue can give utterance to, in the hope that "declamation will establish error." Calmly and coolly, let me dispel such an impression. It is not so!

It is because I love, and love earnestly, all that has tended to make it what it is; and in gratitude, I feel bound to love and to praise the land of my forefather's adoption, and of my own birth. The only proof I can give of that sentiment existing, is in the repudiation of the calumny and slander of those who are dissatisfied with it, and who do not hesitate to use stronger language in depreciation of it than I can produce in its favour.

Until the "Channel Islands" have been visited, and all their beauties and merits have been realized, and well weighed, either as places of temporary sojourn or prolonged residence, allow "opinion," I say, to be weighed in the scale of reason, unalloyed by imagination, and "Jersey," as the principal of those islands, has nothing to fear as to being "found wanting." All that is beautiful in the shape of hill, dale, cliff, valley, dell, and bay, are contained in her circumscribed space, and if the eye is not pleased, and the mind inflated, and the tongue loosed to give expression to the joy felt in meeting the one, there is ample opportunity of meeting the other within a very short space, either of time or distance; but should *terra firma* not contain the joys hoped to be realised on its surface, the "ocean blue" lies at its feet, with all its grandeur and magnificence of extent—with all the excitement which may be enjoyed on her surface, and all the dangers which may be incurred on her breast, as well as the "skiff" in which you may ply upon her bosom. What more, I would ask, do the dissatisfied require? Would they have Baron Munchausen's fictions to be realities? Or would they have roses grown without thorns? It can't be so! The sweetest roses have the most prickly thorns. The greatest pleasures are attended or followed with the most ungratifying alloy. And nature has willed it that we should be so constituted as to require more from her than she is prepared to grant us, and as in one consecutive line of allegory the prettiest and the most agreeable places of residence have their attendant inconveniences. Digression is not the maintenance of a subject, and I have been directing the reader's attention to the opinions of visitors, and not to the soil and its produce, which was the object I had in view when commencing this article. So now to the originally-proposed task.

The enormous crops of Potatoes which are sometimes produced may be inferred from the following facts relative to the produce of a piece of made ground belonging to Mr. I. N. W., in Belmont Road, St. Heliers. This gentleman has a piece of ground, which, as the town extended in the north-eastern direction, became surrounded with roads four to five feet above the level of the meadow, of which it originally formed a part, and which has been filled up with every imaginable kind of refuse from the town to bring it to a proper level with the surrounding surface. From the broken slates, tiles, brickbats, and refuse materials of a building, up to the corroded cast-iron shoot which was once suspended under the eaves of the adjoining roof, and the clinkered cinders from the blacksmith's forge, which had served to weld the same hard materials, and render it malleable to the sledge or hammer;—from the hat, which was once exalted to the dignity of covering the public functionary's head, down to the hob-nailed boot, which had seen so much service as to be not fit to be worn on the labourer's foot;—from the coat, which was once worn, on account of its respectable appearance—perhaps in exultation—by its owner, at its peculiar adaptability to his person, if not to men in general, to the plaited straw, which formed a part of the "protector" of some fair one's head and physiognomical attractions;—and from the refuse of the zinc and tinman's workshop, to the shavings and sweepings from the carpenter's shop, and the oyster-shells and moistened straw from the oyster-stand:—all these rough materials and rejections, with almost every other conceivable kind of rubbish, constitute the basis of this particular spot, with a covering of clay, cinder-ashes, road-scrappings, and the sandy soil dug out in the formation of the drains in passing through the town. This composition, after being mixed together, was planted, during the first two seasons, with Potatoes, which did not produce, as can be well imagined, very much more than sufficed to pay for labour and manure. It was then, unprofitably, laid down for Lucerne, for two years; which not realising the proprietor's expectations, he had it broken up again in the winter of 1852—53, and well

manured with lime, night-soil, and road-scrappings, which was mixed with the surface-soil in the ploughing, using long litter at the time of planting. And now we come to the second years' crop after the Lucerne, which is the particular crop to which I was most desirous of calling attention.

When this piece of ground was turned over, in the winter of 1853—54, the superficial surface of which is one-and-a-half vergées, or two-thirds of an English acre, a good coating of stable-manure was ploughed into it, and it was then planted in rows, at twenty inches apart, with different kinds, but principally with *Goldfinders* and a variety known here as *Newfoundland Potatoes*. (The name, doubtless, proceeding from their having been introduced to the island from that place, with which this island does a large trade.) The growth was extraordinary; the haulm averaging two-and-a-half feet in height, and being of a hard, woody, fibrous texture, the crop was carefully hoed up during the growth. The haulm, at one period during its growth, showed slight symptoms of being diseased, the leaves becoming spotted, and decaying in places; but on examination it proved to be caused by the treading down of trespassers. The amount of produce, when dug out in the month of October, was 400 cabots of 40 lbs. weight, or a total of 16000 lbs., equal to an average of twelve tons to the acre. If this crop had been sold at the rate of 2s. per cabot, the price at which more than three-fourths of them were sold, it would have realised the handsome sum of £40—handsome remuneration for the labour and manure expended on its surface. This is but one of numerous instances of a like character (I could record another and another, but the sequel would be about the same, with the exception of its being a piece of ground made in a gravel-pit); but I have selected this amongst them as being the best proof of the susceptibility of a waste piece of ground being turned to good account by proper management. The piece of ground has always been sufficiently remunerative to cover expences incurred on it since it was filled up, and it has, consequently, cost the proprietor little more than the "loss of the rent" during the filling-up process, and an exercise of that invaluable and meretricious virtue "patience," to make it what it is.

It is a common circumstance to hear of the successes of particular individuals who have broken up cōtil and other previously uncultivated pieces of ground for early crops, breaking them up in the late autumnal months, when there is little else to do on the farm, and planting with a good coating of manure in January, digging out a valuable and remunerative crop in May and beginning of June. One instance I have heard of, a farmer clearing £100 last spring in this manner. I am always pleased to hear of such circumstances, as they act as instigators to others who may be similarly situated, as well as bear corroborative proof of the spontaneous vegetation of the island.

A great diversity of opinion seems to exist here as to the period at which Potatoes should be planted. Some of our cultivators consider they should be in the ground as early as October or November, being thus buried for some months previous to commencing their growth; a plan of which I very much disapprove, as the ground becomes flattened by the autumnal rain, and so hardened as to cause it to adhere too closely to the set to be beneficial to it; whilst it at the same time impedes the growth of the young shoots and the rootlets which proceed from them, and on which the new tubers are produced. Whilst others, and I think judiciously, defer planting until January and February, when the worst of the wet weather and the long-continued autumnal damps are over, and availing themselves of fine, dry weather for the planting and manuring. These often produce earlier and better crops than their neighbours whose crops have been planted four or five months before theirs.

Much importance is to be attached to the manuring of the crop, and to the character of the soil with which that manure is to be mixed. Lime in the first place, and long, loose litter in the planting, suit the stiff soils; but the decayed vegetable and animal matters are most suitable to the light soils. It is a generally accepted, and, I believe, correct impression, that light soils suit Potatoes best; but I, nevertheless, think that soils may be rendered too light for them, and the scorching heat of the July sun may sometimes affect the haulm, and prematurely ripen the crop; this

I have frequently seen on the sand-banks overhanging the sea, around the different bays which intersect the coast of the island, the result sometimes being a small crop of mealy, good Potatoes, but more often of waxy, watery ones, which we are all prepared to condemn as being "inferior," and not at all adapted for "home consumption."—C. B. S., Jersey.

The following varieties of early and second early varieties of Potatoes are particularly worthy of cultivation; and the following are the results produced by a cultivator of many years' experience:—

1. *Shepherd's Fame*, Cockney or Barrington; planted first week in January; ready for use early in May; produce 3 cwt. per perch.
2. *Early Frame*; planted at same time as No. 1; fit for use at same time; very dwarf in habit; no bloom; produce the same.
3. *Hammond's Seedling*; planted 12th January; fit for use middle of May; fine large Potatoes; produce $2\frac{1}{2}$ cwt. per perch.
4. *Goldfinder*; planted 12th January; dug up ripe in July; no bloom; strong growth; were fit for use in May, and of excellent quality; produce 3 cwt. per perch.
5. *Ash-leaf Kidney*; very early, but better adapted for forcing; seldom produces more than 80 lbs. to 100 lbs. per perch.
6. *Smith's Early White Kidney*; planted 10th January; fit for use beginning of May; a clean silver-skin, almost transparent; excellent quality; produce $2\frac{1}{2}$ cwt. per perch.
7. *Champion's Kidney*; planted 6th January; ready for use middle of May; fine shape; produce $2\frac{1}{2}$ cwt. per perch.
8. *Cork Red*; planted 15th January; fit for use in June; a fine red rough-skinned variety; superior quality; produce 4 cwt. to the perch.
9. *York White*; planted 18th January; fit for use in June; keeps good all the year; produce $2\frac{1}{2}$ cwt. per perch.
10. *Silver Skin*; planted 1st February; ready for use in June; of first-rate quality; few small ones; produce $2\frac{1}{2}$ cwt. per perch.
11. *Cook Early*, or *Scotch Regents*; planted 10th February; dug up in beginning of August; of excellent quality; keeps well; produce 3 cwt. per perch.
12. *Axbridge Kidney*; planted 25th January; fit for use at the end of May; a very fine-flavoured Potato; produce $2\frac{1}{2}$ cwt. per perch.

The Jersey perch measures $22\frac{1}{2}$ feet square; 40 perches make a vergée, and $2\frac{1}{2}$ vergées are an English acre.—C. B. S., Jersey.

GROWING TREE ROSES.

ONE of your correspondents having inquired, through the medium of your paper, as to the method of cultivation of the Roses which received the first prize at the last summer Northampton Flower Show, I take the liberty of sending you these remarks, which may, perhaps, be of some use to those who have but little time to devote to the subject.

Possibly, the best way for any one desirous of forming a collection of Tree Roses quickly, would be to go through the nursery-grounds whilst the Roses are in bloom, and at that time to make his own selection, bearing in mind that the first point to be regarded is, that the plant, by its foliage and flowers, appears healthy; for no after-care can at all compensate for a sickly, dwindling stock, or for a Rose budded from it, the habit and growth of which is not, in some degree, at least, assimilated to its foster-mother.

It would be well, also, for those who have but a limited space for their plants to remember, that it is far better to confine themselves to a couple of dozen, or so, of well-known, first-rate varieties, than to purchase thrice the number without due space to plant, or time to devote to the management of these favourites.

The selection being made, aspect, soil, mode of planting, manuring, and after-attention, should each and all have their due share of consideration.

Roses thrive best where they can have a good proportion both of sun and air;—south, south-east, south-west, will suit any of the Perpetuals or Hybrid Chinas, care being

taken that each plant is well staked, and the head guarded from the more boisterous winds.

As to the soil,—care and attention is most necessary. The Dog Rose, or Briar, grows in most soils, but more luxuriantly in those of a cool, clayey nature; and bearing in mind the natural inclination of the plant due provision should, by all means, be made for it. If the ground where the Rose is to be planted be sharp, clayey, and shallow, or if it be sandy and dry, it will well repay the planter to cut out the hole at least three feet in depth, and the same in width, and putting into the hole one foot or eighteen inches of broken brick, stone, or garden-pot, fill the remainder with a compost of one part pulverized clay, one part good maiden loam, and one of thoroughly-rotten manure, well mixed; but be the soil what it may, these two points should always be kept in mind: first, that it be of a cool nature; and secondly, that it cannot be too rich.

Care in the *planting* is of no less importance. It is a very common mistake, among the ignorant, to show extra care to any plant by burying the roots extra deep in the earth; when this is done with the Tree Rose, the head almost invariably is sickly, whilst the stock (which we must bear in mind we are coercing from its natural form of the bush) struggles more vigorously than ever to resume its old habit, and keeps continually throwing up long asparagus-like suckers from its roots.—G. E. MAUNSELL, *Thorpe Malsor Rectory*.

(To be continued.)

LIVERPOOL SECOND ANNUAL POULTRY EXHIBITION.

THE efforts of the gentlemen composing the committee of the Liverpool Exhibition to establish an annual show of Poultry have proved unusually successful. On the 17th, 18th, and 19th of January, an assemblage of all the best specimens throughout the kingdom here entered into competition, the general prize-list being most liberal; in addition to which, the committee offered seven very handsome and useful pieces of plate as premiums for the most deserving pens in the leading varieties. From this cause alone the list of exhibitors embraces nearly every well-known breeder, and the competition was far closer than is generally witnessed at such meetings; not a single indifferent class was, therefore, to be found, and even poultry of the highest repute had a hard struggle to maintain their superiority.

The Carriage Repository of Messrs. Lucas is well calculated for the purposes to which it has just been applied, the light being good, and the pens very open and airy in appearance; it is rarely that so favourable an opportunity, therefore, presents itself for minute inspection, or that the poultry, generally, can be seen to so great advantage. The *Spanish* mustered in full force. In the adult class, those of Mrs. Lydia Stowe secured the first premium, and it would be superfluous to say more than that they were shown, as usual, in the highest possible condition; pressing closely, however, were the birds of the Rev. Stephen Donne, of Oswestry. Indeed, there is not a doubt but that the two hens in the second prize-pen were decidedly the best in the whole classes for this variety, being perfectly white and clear in the face, and possessing a style of carriage that adds much to their success in the exhibition pen. The male bird must, however, prove a drawback, as being by no means equal to his fellows. In the chicken, a very perfect and well-selected pen, exhibited by Mr. Joseph Rake, of Bristol, took precedence, not only in their own class, but also of their seniors; consequently, securing the much-coveted Silver Tankard. In the *Dorkings*, the Rev. Stephen Donne was the winner of the Cup, with some excellent specimens; the hens particularly so. The same gentleman was also equally fortunate in the *Buff Cochins* classes, his old birds taking the first prize; and from his chicken being alike successful in their class, the competition for the plate rested entirely between these two pens, and was eventually given in favour of the old birds.

It is really surprising to see the rapid improvement that has taken place within the last two years in Dorkings; weights formerly regarded as fabulous, now are not by any

means uncommon; and many of the successful birds were claimed early on the first day. The Cochins, too, were far superior to those of last season, both for colour and character. Many were sold, and though the high prices of former years were no longer attainable, several pens were claimed at very remunerative prices. All the *Game* were superior as classes, the almost total absence of indifferent specimens adding much to the interest of this portion of the exhibition. Perfection of form was all but universal, and the most careful selection as to colours was very apparent; in seventy pens, only one instance of neglect as to colour of the legs occurring, a circumstance hitherto unprecedented; still, inattention seems as rife as ever to our oft-repeated remonstrances, as to strangers being mated for the express occasion; and we noticed several hens injured seriously in consequence. The *Hamburghs* were very good, and the Golden-spangled particularly excellent. In all the *Polish* the competition ran high. Mr. G. C. Atkins, of Birmingham, however, still maintained his position with the pens so frequently successful elsewhere. The *Bantams* were very good; Mr. Gilbert Moss, of Liverpool, monopolising most of the premiums. All these varieties were shown in very superior feather and condition. In *Geese*, the Embden variety proved successful against no mean rivals, the property of Mrs. Townley Parker; the latter birds were very fast sinking in constitution from being too frequently exhibited. The *Rouen Ducks* were very good, closely-bred birds; the *Aylesbury* varieties were not superior; but the *Call Ducks* were excellent. The *Turkeys* could not boast of numbers, only three pens competing; these, however, were well-matched, fine birds. The attendance was very good, most of the surrounding gentry being present; but the public approval of the arrangements generally was universal.

The Judges were Mr. Edward Hewitt, of Birmingham; and Mr. John Baily, of London. We append a list of their decisions:—

Class 1.—SPANISH.—Cock and two Hens exceeding one year old.—19. First prize, Mrs. Lydia C. Stow, Bredon, near Tewkesbury. Age, more than one year. 2. Second prize, Rev. Stephen Donne, Oswestry. Age, eighteen months. Highly Commended.—3. Mr. Charles Jones, 51, Bridge-street, Birkenhead. 13. Mr. A. M'Nicol, Birkenhead. 17. Mr. Joseph Rake, Bristol. Age, Cock three years old, Hens one year and eight months.

Class 2.—SPANISH.—Cock and two Pullets, Chicken of 1854.—20. First prize, Silver Cup, Mr. Joseph Rake, Bristol. Hatched 15th of May. 33. Second prize, Mr. William Twiss, Knowsley, Prescott. Hatched 15th of February, 1854. Very Highly Commended.—23. Mr. Charles Jones, 81, Bridge-street, Birkenhead. Highly Commended.—26. Mr. John Harrison, jun., Snelston Hall, near Ashbourne, Derbyshire. Hatched in April. Commended.—25. Miss Bell, Woodhouselees, Canonbie, Carlisle. Cockerel hatched in March, and Pullets in April, 1854. 27. Mr. William Copple, cottager, near Prescott. Age, eight months. 35. Mr. Edward Emans, 4, Bankfield Crescent, Bootle. Hatched 10th of March, 1854. 37. Mr. A. M'Nicol, Birkenhead. Age of Cock on the 17th of January, 1855, eight months; Pullets, one. (Very good class.)

Class 3.—DORRING (Coloured).—Cock and two Hens exceeding one year old.—40. First prize, Silver Cup, Rev. Stephen Donne, Oswestry. Age, eighteen months. 52. Second prize, Mr. Thomas Ullock, Quarry House, Windermere. Age, one year and eight months. Very Highly Commended.—42. Mr. William Wright, West Bank, Widnes, near Warrington. 62. Mr. Edward Lister, Cassia Lodge, near Northwich, Cheshire. 63. Mr. Edward Lister, Cassia Lodge, near Northwich, Cheshire. Highly Commended.—41. Rev. Stephen Donne, Oswestry. Age, eighteen months. 50. Mr. William Twiss, Knowsley, Prescott. 51. Mrs. Thomas Townley Parker, Astley Hall, Chorley, Lancashire. 54. Lord Berwick, Cronkhill, near Shrewsbury. Commended.—58. Mr. William Copple, Eccleston, Prescott. Age, hens eighteen months, cock three years.

Class 14.—DORRING (Coloured).—Cock and two Pullets, Chicken of 1854.—82. First prize, Mr. Thomas Townley Parker, Astley Hall, Chorley, Lancashire. 103. Second prize, Mr. John Copple, Eccleston, Prescott. Age, eight months. Very Highly Commended.—68. Mr. William Wright, West Bank, Widnes, near Warrington. Age, ten months. 85. Lord Berwick, Cronkhill, near Shrewsbury. Age, about seven months. 108. Mr. Edward Lister, Cassia Lodge, near Northwich. Cock hatched March 27th, Pullets hatched May 2nd, and April 18th. 111. Mr. Henry Smith, The Grove, Cropwell Butler, near Bingham, Notts. Age of Cockerel ten months and one week, Pullets nine months. Highly Commended.—64. Mr. W. Rutledge, Storthend, Staunton, Kendal. Hatched May 1, 1854. 84. Lord Berwick, Cronkhill, near Shrewsbury. Age, about seven months. 93. Lord Berwick, Cronkhill, near Shrewsbury. Age, about seven-and-a-half months. 100. Mr. John Copple, Eccleston, Prescott. Age, seven months. 101. Mr. John Copple, Eccleston Prescott. Age, eight months. 102. Mr. John Copple, Eccleston, Prescott. Age, eight months. Commended.—65. Rev. Stephen Donne, Oswestry. Age, nine months. 78. Earl of Sefton, Croxteth, Liverpool. 87. Mr. Thomas Ullock, Quarry House, Windermere. Age, eight and nine months. 90. Miss Steele Perkins, Sutton Coldfield, near Birmingham. Age, about eight months. 104. Mr.

William Copple, Eccleston, Prescott. Age, eight months. (Unusually good class.)

Class 5.—DORRING (White).—Cock and two Hens, exceeding one year old.—114. First prize, Mr. George Fell, Warrington. Age, more than one year old. 115. Second prize, Mr. Joseph Jennens, Moseley, Birmingham. Age, more than one year old.

Class 6.—DORRING (White).—Cock and two Pullets, Chicken of 1854.—118. First prize, Mr. William W. Rutledge, Storthend, near Kendal. Age, hatched 28th of April, 1854. 119. Second prize, Mr. J. Jennens, Moseley, Birmingham. Age, six months.

Class 7.—COCHIN-CHINA (Cinnamon and Buff).—Cock and two Hens, exceeding one year old.—121. First prize, Silver Cup, Rev. Stephen Donne, Oswestry. Age, eighteen months. 129. Second prize, Mr. William Copple, Eccleston, Prescott. Age, eighteen months.

Class 8.—COCHIN-CHINA (Cinnamon and Buff).—Cock and two Pullets, Chicken of 1854.—139. First prize, Rev. Stephen Donne, Oswestry. Age, seven months. 178. Second prize, Mr. William Copple, Eccleston, Prescott. Age, eight months. Very Highly Commended.—153. Mr. Thomas Burnett, Hutton, near Preston, Lancashire. Age, nine months. Highly Commended.—140. Rev. Stephen Donne, Oswestry. Age, nine months. 155. Mr. R. E. Ashton, Ramsbottom. Age, eight months. 167. Mr. Joseph Harrison, Mitchley Cottage, Edgbaston, near Birmingham. 171. Mr. Thomas Inicks, Pennfields, near Wolverhampton. Age, eight months and two weeks. Commended.—181. Mr. William Copple, Eccleston, Prescott. Age, eight months.

Class 9.—COCHIN-CHINA (Brown and Partridge-Feathered).—Cock and two Hens, exceeding one year old.—199. First prize, Mr. George C. Adkins, West House, Edgbaston, near Birmingham. 198. Second prize, Mr. William Wright, West Bank, Widnes, near Warrington.

Class 10.—COCHIN-CHINA (Brown and Partridge-Feathered).—Cock and two Pullets, Chicken of 1854.—304. Mr. Joseph Hindson, 43, Breck Road. Hatched 12th May last.

Class 11.—COCHIN-CHINA (White).—Cock and two Hens, exceeding one year old.—213. First prize, Rev. Stephen Donne, Oswestry. Age, eighteen months. 210. Second prize, Mr. Samuel Job, Holmfield House, Aigburth.

Class 12.—COCHIN-CHINA (White).—Cock and two Pullets, Chicken of 1854.—223. First prize, Mr. William Wright, West Bank, Widnes, near Warrington. Age, eight months. 222. Second prize, Miss Viola W. Musgrove, Church Road, Seaford, near Liverpool. The Cock is thirty-seven, and the Pullets twenty-eight weeks old. Highly Commended.—219. Mrs. Lydia C. Stow, Bredon, near Tewkesbury. Age, eight-and-a-half months. 221. Mr. Samuel Job, Holmfield House, Aigburth. Hatched May, 1854. 224. Mr. William Wright, West Bank, Widnes, near Warrington. Age eight months.

Class 13.—COCHIN-CHINA (Black).—Cock and two Hens, exceeding one year old.—226. Second prize, Mr. Joseph Harrison, Mitchley Cottage, Edgbaston, near Birmingham. (First prize withheld.)

Class 14.—COCHIN-CHINA (Black).—Cock and two Pullets, Chicken of 1854.—227. Mr. George C. Adkins, West House, Edgbaston, near Birmingham. 228. Second prize, Mr. Robert Sergecson, 16, Nile Street, Liverpool. Age, eight months and twenty-three days.

Class 15.—MALAY.—Cock and two Hens, exceeding one year old.—230. First prize, Mr. Thomas Hunt, 13, Wilton-street, Liverpool.

Class 16.—MALAY.—Cock and two Pullets, Chicken of 1854.—231. First prize, Mr. Thomas Hunt, 13, Wilton-street, Liverpool.

Class 17.—GAME FOWL (White and Piles).—Cock and two Hens, exceeding one year old.—232. First prize, Mr. Henry Felthouse, Tamworth. 233. Second prize, Mr. Edwin L. Bullock, Hawthorn House, Handsworth.

Class 18.—GAME FOWL (White and Piles).—Cock and two Pullets, Chicken of 1854.—240. First prize, Mr. Henry Felthouse, Tamworth. Age, eight months. 236. Second prize, Mr. Josiah B. Chunc, Severn Cottage, Coalbrookdale, Salop.

Class 19.—GAME FOWL (Black-breasted and other Reds).—Cock and two Hens, exceeding one year old.—246. First prize, Silver Cup, Mr. George C. Adkins, West House, Edgbaston, near Birmingham. 248. Second prize, Earl of Sefton, Croxteth Hall, Liverpool. Very Highly Commended.—244. Mr. Theod. William Pearse, Bromham Road, Bedford. 245. Mr. George C. Adkins, West House, Edgbaston, near Birmingham. (Meritorious class.)

Class 20.—GAME FOWL (Black-breasted and other Reds).—Cock and two Pullets, Chicken of 1854.—264. First prize, Earl of Sefton, Croxteth Hall, Liverpool. 260. Second prize, Earl of Sefton, Croxteth, Liverpool.

Class 21.—GAME FOWL (Blacks and Brassy-winged, Greys and Blues).—Cock and two Hens, exceeding one year old.—275. First prize, Mr. Henry Worrall, Knotty Ash House, near Liverpool. 276. Second prize, Mr. Henry Worrall, Knotty Ash House, near Liverpool. Highly Commended.—287. Mr. Charles Brown, 84, Sherlock Street, Birmingham. (Good class.)

Class 22.—GAME FOWL (Blacks and Brassy-winged, Greys and Blues).—Cock and two Pullets, Chicken of 1854.—302. First prize, Mr. Richard Edward Ashton, Ramsbottom. Age, eight months. 295. Second prize, Mr. Thomas William Jones, Wellington, Shropshire. Hatched May 17th, 1854.

Class 23.—GOLDEN-PENCILLED HAMBURGH.—Cock and two Hens, exceeding one year old.—303. First prize, Mr. William Clare Worrall, Rice House, Knotty Ash, Liverpool. 305. Second prize, Mr. Henry Worrall, Knotty Ash House, Liverpool.

Class 24.—GOLDEN-PENCILLED HAMBURGH.—Cock and two Pullets, Chicken of 1854.—313. First prize, Mr. James F. Greenall, Grapenhall Hall, Warrington. Age, seven months. 310. Second prize, Mr. William Clare Worrall, Rice House, Knotty Ash, Liverpool.

Class 25.—**GOLDEN-SPANGLED HAMBURGH**.—Cock and two Hens, exceeding one year old.—317. First prize, Silver Cup, Mr. Joseph Conyers, 42, Boar Lane, Leeds. 327. Second prize, Mr. William C. Worrall, Rice House, Knotty Ash, Liverpool.

Class 26.—**GOLDEN-SPANGLED HAMBURGH**.—Cock and two Pullets, Chicken of 1854.—330. First prize, Mr. William Clare Worrall, Rice House, Knotty Ash, Liverpool. 334. Second prize, Mr. Joseph Conyers, 42, Boar Lane, Leeds. Highly Commended.—332. Mr. Thomas West, Eccleston Place, near St. Helens. 340. Mr. William Cannan, Bradford, Yorkshire. Commended.—337. Mr. W. Rutledge, Storth End, near Kendal. Hatched 30th March, 1854.

Class 27.—**SILVER-PENCILLED HAMBURGH**.—Cock and two Hens, exceeding one year old.—353. First prize, Mr. James Dixon, Bradford. 354. Second prize, Mr. James Dixon, Bradford.

Class 28.—**SILVER-PENCILLED HAMBURGH**.—Cock and two Pullets, Chicken of 1854.—360. First prize, Silver Cup, Mr. Edward Archer, Great Malvern. 355. Second prize, Lady Eleanor Hopwood, Knowsley Parsonage, near Prescott. Age, ten months. Highly Commended.—363. Mr. James Dixon, Bradford.

Class 29.—**SILVER-SPANGLED HAMBURGH**.—Cock and two Hens, exceeding one year old.—369. First prize, Mr. James Dixon, Bradford. 370. Second prize, Mr. James Dixon, Bradford.

Class 30.—**SILVER-SPANGLED HAMBURGH**.—Cock and two Pullets, Chicken of 1854.—377. First prize, Mr. William Cannan, Bradford, Yorkshire. 378. Second prize, Mr. James Dixon, Bradford. Highly Commended.—372. Josiah B. Chune, Severn Cottage, Coalbrookdale, Shropshire.

Class 31.—**POLAND FOWL (Black, with White Crests)**.—Cock and two Hens.—379. First prize, Mr. George C. Adkins, West House, Edgbaston, near Birmingham. 383. Second prize, Mrs. C. H. Horsfall, Driffield Bank, near Derby. Age, about twenty months.

Class 32.—**POLAND FOWL (Golden)**.—Cock and two Hens.—390. First prize, Mr. James F. Greenall, Grappenhall Hall, Warrington. 387. Second prize, Mr. George C. Adkins, West House, Edgbaston, near Birmingham.

Class 33.—**POLAND FOWL (Silver)**.—Cock and two Hens.—391. First prize, Silver Cup, Mr. George C. Adkins, West House, Edgbaston, near Birmingham. 392. Second prize, Mr. George C. Adkins, West House, Edgbaston, near Birmingham. Highly Commended.—399. Mr. James Dixon, Bradford.

Class 34.—**BANTAMS (Gold-laced)**.—Cock and two Hens.—403. First prize, Mr. George C. Adkins, West House, Edgbaston, near Birmingham. 408. Second prize, Mr. Gilbert W. Moss, Liverpool.

Class 35.—**BANTAMS (Silver-laced)**.—Cock and two Hens.—410. First prize, Mr. Gilbert W. Moss, Liverpool. 412. Second prize, Mr. Joseph Rake, Bristol. Age, unknown.

Class 36.—**BANTAMS (White)**.—Cock and two Hens.—414. First prize, Mr. Gilbert W. Moss, Liverpool. 416. Second prize, Mr. George C. Adkins, West House, Edgbaston, near Birmingham. Highly Commended.—415. Mr. Gilbert W. Moss, Liverpool.

Class 37.—**BANTAMS (Black)**.—Cock and two Hens.—422. First prize, Mr. Gilbert W. Moss, Liverpool. 423. Second prize, Mr. Gilbert W. Moss, Liverpool.

Class 38.—**BANTAMS (Any other variety)**.—Cock and two Hens.—425. First prize, Mr. Gilbert W. Moss, Liverpool. 426. Second prize, Mr. George C. Adkins, West House, Edgbaston.

Class 39.—**GERSE**.—Gander and two Geese.—429. First prize, Mr. William Windham Hornby, Knowsley Cottage, Prescott. Age, hatched May 10th, 1854. 432. Second prize, Mrs. Thomas Townley Parker, Astley Hall, Chorley, Lancashire.

Class 40.—**DUCKS (White Aylesbury)**.—Drake and two Ducks.—434. First prize, Mr. Robert Statler, Liscard. 435. Second prize, Mr. J. Jennens, Moseley.

Class 41.—**DUCKS (Rouen)**.—Drake and two Ducks.—453. First prize, Mr. David Henderson, Shuttleworth, near Bury, Lancashire. Age, nine months. 444. Second prize, Mr. Jonathan Williamson, Whitefield House, Walton, Liverpool. Very Highly Commended.—447. Mr. Theed William Pearse, Bromham Road, Bedford. (Good class.)

Class 42.—**DUCKS (Any other variety)**.—Drake and two Ducks.—458. First prize, Mr. Henry Worrall, Knotty Ash House, near Liverpool. 457. Second prize, Mr. H. Worrall, Knotty Ash House, near Liverpool.

Class 44.—**TURKEYS**.—Turkey Cock and two Hens.—463. First prize, Mr. William Windham Hornby, Knowsley Cottage, Prescott. 462. Second prize, Mr. Joseph Conyers, Leeds.

ledge of antiquity was so comprehensive, that any deviation from accuracy in his great historical work, even on a subordinate and incidental point, is worthy of being noted. His history has, moreover, been revised by editors of so much ability and learning, that those errors which were inseparable from so vast an undertaking have been for the most part rectified. The following passage, however, stands without any observation in the recent excellent edition of the *Decline and Fall of the Roman Empire*, by Dr. Wm. Smith:

“Almost all the flowers, the herbs, and the fruits that grow in our European gardens, are of foreign extraction, which, in many cases, is betrayed even by their names: the apple was a native of Italy; and when the Romans had tasted the richer flavour of the apricot, the peach, the pomegranate, the citron, and the orange, they contented themselves with applying to all these new fruits the common denomination of apple, discriminating them from each other by the additional epithet of their country.”—Vol. i. c. ii. p. 189.; Dr. Smith's edition.

“Of the exotic fruits enumerated in this passage as known to the Romans in the early period of the empire, the *Malus Armeniaca*, or apricot, is mentioned by Columella, a writer of the first century, as cultivated in Italy in his time. (*De Re Rust.*, v. 10. xi. 2.) The Romans also called this fruit *præcocia* or *præcoqua*, as being an early-ripening peach. Speaking of the different *Persica*, or peaches, Pliny says, ‘Maturescunt æstate præcocia, intra triginta annos reperta, et primo denariis singulis venundata.’ (N. H., xv. 11.)

“Martial, in an epigram headed ‘*Persica*,’ or ‘*Nucipersica*,’ speaks of the apricot as inferior to the peach, and as a stock on which the peach was grafted:

‘Vilia maternis fueramus præcoqua ramis:
Nunc in adoptivis Persica cara sumus.’—xiii. 46.

“Palladius, however, who understood gardening better than Martial, describes *Armenia* or *præcoqua* as a species of peach, and as being grafted on the plum (xii. 7). Dioscorides likewise, after speaking of peaches (*Περσικα μήλα*), says that the smaller sort, called *Armenians*, in Latin *πρακκία*, are more digestible (*De Mat. Med.*, i. 165; and see Sprengel's note, vol. ii. p. 416). The Greek form of *præcocia* or *præcoqua* occurs as *πρακκία* in Galen *De Fac. alim.*, ii. 20, and as *βερικκία* in the Geoponics. Compare Meursius, *Lex Græc. barb.* in *βερικκία* and *Πρεκοκία*. From this corrupted form of the Latin *præcocia* was formed the Italian *albercocco*, with similar forms in the other Romance languages, and the old English *apricock*. (See Diez, *Rom. Wörterbuch* in *Albercocco*.) Le Grand d'Aussy (*La Privée des Français*, tom. i. p. 216) states that the apricot was not cultivated in France till the sixteenth century.

“The peach, *Malus persica*, had been introduced into Italy before the time of Columella (v. 10), and its varieties are described by Pliny (xv. 11. 13), who states that it passed into Italy from Persia through Egypt. According to Le Grand d'Aussy, the peach was known to the ancient Gauls, and was cultivated in France in the time of Charlemagne (*ib.* p. 218).

“The pomegranate, *Punicum malum*, or *granatum*, known to the Greeks in early times by the name of *πόιν*, appears to have been cultivated in Italy under the early emperors. (See Plin., N. H. xiii. 34; Columella, xii. 41.)

“The citron, *Malus Assyria*, *Medica*, or *citrea*, was not cultivated in Italy in the time of Pliny. He states that the fruit was only eaten as an antidote against poison, and that the plant would not grow out of Media and Persia (xii. 37, xv. 14). Virgil describes the citron as a Median tree, and speaks of its fruit as a remedy against poisons (*Georg.* ii. 126—135. Compare Theophrast., *Hist. Plant.*, iv. 4). A writer named Oppian is cited by Macrobius, as stating in his work on Wild Trees, that the citron did not then grow in Italy: ‘*Citrea item malus et Persica; altera generatur in Italia, et Media altera.*’ (Saturnal., iii. 19. § 4.) Palladius (iii. 6. v. i.), whose time is uncertain, but who is referred to the fourth century, gives a minute account of its cultivation as being then common in Italy.*

“But the orange, *Citrus aurantium Sinensis*, was a plant wholly unknown to the ancients. It is a Chinese tree, and it lay beyond the range of their navigation and commerce.

* This is a mistake. The *Medica* of Palladius is the modern *Lucerne*.—Ed. C. G.

QUERIES AND ANSWERS.

GARDENING.

“WAS THE ORANGE KNOWN TO THE ROMANS?”

[This question is put to us by *Hereford* in a communication in which he enquires about the oldest apple of England, which we will answer next week. It is somewhat singular that immediately after we received that communication the following appeared in that storehouse of information, “Notes and Queries.” We publish it entire, and will append our own opinion, so that *Hereford* may be in possession of both.

“Gibbon was, in general, so careful a writer, and his know-

There is no reason to suppose that any ancient Roman had even seen the fruit of the orange. The common account is, that the orange was introduced into Europe by the Portuguese as late as the sixteenth century; and it is added that the original orange-tree brought from the East was still growing at Lisbon, near the end of the last century, in the garden of Count San Lorenzo (Le Grand d'Aussy, *ib.* p. 199).

"It appears, however, that this account is not exact, and that the merit of having introduced the orange-tree into Europe does not belong to the Portuguese. According to the recent researches of Professor Targioni (as abstracted in "Historical Notes on Cultivated Plants," in the *Journal of the Horticultural Society of London*), the orange-tree was introduced into Europe from Arabia by the Moors; and was cultivated at Seville, towards the end of the twelfth century, and at Palermo, and probably at Rome, in the thirteenth. Le Grand d'Aussy likewise shows that some plants of it existed in Dauphiné in the year 1333. Other writers have supposed that it was brought from Asia by the Venetians or Genoese. But whatever may have been the precise time at which the orange-tree was introduced into Europe, and whatever the channel by which it came, it is certain that Gibbon has committed an anachronism of at least ten centuries, in ascribing the cultivation of the orange to the Romans of the first period of the Empire. L."

We differ from L. in his opinion that the Orange was entirely unknown to the ancients, and it is still our belief, as we published some twenty-five years since, that the Romans "became possessed of the Orange in the fourth century." (*History of English Gardening*, p. 17.) We so believe, because we think that the fruit known to us as the Orange is the Assyrian or Medean Apple of Pliny. He says (*Nat. Hist.*, l. xii., c. 3), the Assyrian Apple, by some called the Medean, is an antidote against poison; and we know that the juice of the Orange and of other fruits containing citric acid, is used to check the effects arising from narcotic poisons. The leaf, he says, is like that of the Arbutus, and interspersed among thorns, and so is that of the Orange. Sometimes the fruit itself is not eatable (*Pomum ipsum alias non manditur*); but it excels in fragrance, as do the leaves, whence it is placed among clothing, to which it imparts its perfume, and keeps from them noxious vermin. The tree bears fruit at all seasons, for whilst some are falling others are ripening, and others are only partly matured. People have endeavoured to convey them to their own countries in earthen vessels, an air-vent being provided by holes to the roots. But only among the Medians and Persians will it grow. The seed, or, as Theophrastus and Virgil allege, the fruit was used by the aristocracy of Parthia, cooked with their food, to impart a grateful odour to their breath. No other tree is so esteemed among the Medes.

Palladius (*De Re Rustica*, l. iv., c. 10.), writing in the fourth century, had overcome the difficulty of removing this fruit-tree; for he states, in his farms in Sardinia, and in the Neapolitan territory, where the soil and atmosphere are warm, and the moisture abundant, by degrees he had been enabled always to succeed in obtaining its fruit. He did not, however, ripen it well, or he was fond of curds and whey, for he recommends it to be soaked in "sheep's milk" (*ovillo lacte*)! However, as Matthioli states, Italy then produced three kinds of Orange, "the acid, the sweet, and the vinous-flavoured." It must be remarked, moreover, that Palladius mentions a mode of culture whereby the fruit was rendered sweet.

We are quite aware that the fruit mentioned as above, by Pliny and Palladius, is considered by many to be that known to us as the Citron; but some, as Dodoens, Lobel, Manardus, Brunfelsius, Turner, and others, are of opinion that it is our Orange.

Whence the name of Orange is derived is doubtful. Some derive it from *Arantia*, the name of a town in Achaia, and others from *aurum*, on account of its golden-coloured fruit. At all events, it takes the name from an original acknowledged by all the nations of Europe, for in German it is *Pomerangen*, in French *Pomme d'Orange*, in Italian *Arancio*, and in Spanish *Naranzas*. Nicander, who wrote 140 years before the birth of Christ, speaks of the Median Apple under the name of *Narantzian*. His words in his "*Alexipharmakis*" are these—*το μηδον μηλον εσι το μεδικον το νεραντζιον*. That is, in

English, "The Median apple is the Medican, and the *Nerantzian*."]

GREENHOUSE AT THE END OF A COTTAGE.

"I propose erecting a small greenhouse at the west end of my cottage, between the gable thereof and the boundary-wall of my property; but am doubtful whether such a position, facing south, but overshadowed by the cottage, may be favourable, seeing that it is but little exposed to the sun. I should be glad if you would say whether the position is good. I intend making the greenhouse span-roofed. Would you recommend that? And for such a small house, how should I heat it—by stove or flue?—WILLIAM J. EASTON."

[We thought we had answered this last week, and regret that it has been mislaid. It is a perfect pattern of an inquiry (being accompanied by drawings), and we will do our best to oblige you. In such a position a span-roof would be best. The height would be according to your own fancy—nine or ten feet at the ridge, and six or seven at the side walls would do. You will grow the commoner greenhouse plants very well in it, provided you give plenty of air. For this purpose you should have a sash on the east side, and one on the west side, made to open. This, however, will add to the expense. Now, in such a small house there would be no necessity for rafters, except for the end; sash-bars resting on the ridge-board, and the wall-plates at the side would do. And supposing that you had glass in the south front, above three feet from the ground, and glass at the north end, and a door there where you now show a wall, by the opening of moveable windows in these you could command enough of air, without moving any part of the roof, and this would be a great advantage. As you seem to have grass, and a walk behind the greenhouse, much of the pleasure would consist in being able to walk through it. For the sake of economy, there need not be so much glass in the north end as in the front; though it would look better if it were the same. In such a house, the pathway should be in the middle, and from two-and-a-half to three feet in width. This would leave three feet on each side, and this you might appropriate to a stage on each side for plants, each stage having three or four shelves; or you might have a table all along each side some three feet from the ground, and Mosses and Ferns growing on the ground beneath; or you might make a conservatory of it, and plant against the two walls, Camellias, Oranges, Cacti, Acacias, &c. Now, the heating of such a small place is worst of all. Could you take a couple of pipes from a kitchen boiler? Could you get a small boiler placed outside the house somewhere, and heat that little boiler with gas, as lately alluded to? If not, then you must either have a small flue, or a small boiler for hot water; and in either case, we would place the flue or the pipes under the pathway, if we made a conservatory of the house. The flue we would place there, however we arranged the house. Sometime ago Mr. Fish described heating such a house with a four-inch flue, covered first with a slate, and then a paving tile; these tiles forming part of the floor. The flue came in at one end, went within two feet of the other, and returned again to the chimney, and he says nothing could answer better for keeping a medium heat of from 40° to 45°, even in cold weather. A small stock-hole covered over, at the north side of the house, would do either for flue or boiler. If you had a stage, and preferred hot water, a flow and return three-inch pipe should go on each side of the house below the stage. We confess, however, that were the place ours, and despite of increased taxation, we would not like to go to the expence of heating merely such a small place, but would take in the whole space between the two walls, some twenty feet by nine, so as to bring the south end of the greenhouse nearly as far forward as the front of the house; and then what a beautiful promenade you would have, and the glass would cost you almost as little as anything you could have. If such you resolved to do, we would provide some narrow ventilators in the apex of the roof, in addition to the openings at the end, and having done so, we would place strong sash-bars, say one-and-a-half inch by two-and-a-half, some twenty inches apart, and we would place squares of that length crosswise, and some ten or twelve inches wide. This would be the most economical

mode of doing it, and would, when done, be worth going to the expence of having a stock-hole, and either a flue or a small boiler for it. At its contemplated size, we would not have a stock-hole if we could heat in winter either from the mansion or from a jet of gas heating a small copper, or even a tin boiler. Mind, no gas must get into the house; and, we may add, that we have no faith in any portable stove to stand inside, however praised and patented.]

CLIMBERS FOR A GREENHOUSE.

"I have, in my greenhouse, above the stage where I have my blooming plants, three rods, four inches apart and twelve feet long. I have seen in a catalogue, a new *Passiflora* called *Shepherdii*, recommended for greenhouses. Now, I wish to ascertain, if I could, from a pot on the stage, train this plant to the rods; and as I could not afford to let the plant hang down, because it would come in the way of the plants underneath, the question is, whether I could do justice to the plant by keeping it tied to these rods; and would it flower well next summer if procured now? If your answer is favourable, would you please state the sized pot you would recommend, and the soil to plant in? Last summer I trained *Tropaeolum Moritzianum*, and *Thunbergia alata*, with *Ipomoea Burdigii* and *Cerulea*; but I wish to have a change for the better, as my place is small. I like something showy, but of course good. Would you please also to state what are good bedding-out annuals, their names and colours, with height? and you will much oblige—J. G."

[We are not acquainted with the Passion-flower of which you speak. If so new, we could give you little hopes of its flowering well the ensuing summer. If you bought it, and grew it in peat and loam during the summer, giving it more pot-room as it wanted it, we could give you good hopes for 1856. You would require a pot for it then from twelve to fifteen inches in diameter. Although it would do on the rods, it would not look so pretty as when dangling. A good strong plant of *Ipomoea Learii* would suit you, and so would *Mandevilla suaveolens*. For a summer ornament, nothing could beat a mixture of the white, orange, and yellow *Thunbergia*, only the Red Spider must be looked after. For winter, the *Habrothamnus elegans* would be a gem. Bedding annuals will receive notice ere long.]

THE CHRISTMAS ROSE.

"Will you be so good as to give us the particulars of the culture of the 'Christmas Rose;' that is, what is the *site* and *soil* suited to it. We were desirous of having them near the house, on a terrace very much exposed to a southern sun, very dry in summer, but they do not thrive there.—AN OLD SUBSCRIBER."

[We are sorry to be able to give you no encouragement for growing the Christmas Rose; on your dry, exposed terrace-border a little loamy soil would help it, even though it had a little clay in it, by keeping moisture near it. But the place which the plant loves is not so much particular soil as a damp, shady position. The best thing you can do, is, therefore, to move your favourite plants to such a position, and they will soon thank you. We hope the next question you ask we shall be able to give you better encouragement.]

VINES BREAKING SLOWLY.

"You will much oblige by informing me how long a time Vines should be before they break after starting. I started mine about the 12th of December; the first three weeks at 45° by day, and 40° at night, and now I am keeping them 60° by day and 55° by night. I keep them very moist at all times, and shall do so until I perceive them start. Have I anything to fear? They were started before Christmas, and I think they never ceased growing as I should have wished them. I pruned them after the first hard frost and I saw no signs of sap.—A TOP SAWYER."

[You have no reason to be alarmed; let the Vines take their time; get every bud broke before you rise higher than 60°. See that the roots are protected from cold.]

TO CORRESPONDENTS.

FUNGUS ON GOLD FISH.—*Caroline* says that a confectioner cured his by putting them into some water with which his preserving pan had been washed, but she does not say what the preserve was which had been in

the pan. The acid of the fruit must have been the remedy, if this be true.

SPANISH FOWLS TURNING WHITE (*H. T. G.*).—This is frequently the case. We have heard of a black Spanish hen becoming white spangled with black, and at a subsequent moult becoming all black again.

DOWNIES NEW BEE-HIVE.—*Bromley* wishes to know where these can be obtained.

CAGED BIRNS (*Argus*).—In our early Volumes there are very full directions for their management, and some particulars about Canaries. Commence breeding at the end of March. A cock and a hen bird are best, but if you wish to have two hens mated with him you must keep the ladies by themselves all the winter in a large cage that they may become attached. We know of no really good separate work on the Canary.

CALENDAR FOR FEBRUARY.

FLOWER-GARDEN.

ANEMONES, sow; finish planting, b. and c. ANNUALS (Tender), sow in hotbed; admit air to daily; water slightly; cover with mats the glasses at nights; sow seeds of blue and white *Campanula carpatica* in heat, for autumn-flowering, e.; pot old plants of each, and put in heat for cuttings, b.; sow *Nemophila*, and other *Californian annuals*, to flower after autumn-sown ones; (Hardy) sow in borders, e.; for early blowing, sow in pots in a hothouse. AURICULAS, dress, and attend carefully those under glass, as the buds appear. BIENNIALS (Hardy), sow, e. BULBS, finish planting, CARNATIONS, plant, and shelter from cold winds. DAHLIAS, sow, and place tubers in hotbed, to break buds for slipping. DRESS borders generally. EDGINGS of Box, &c., may be planted and repaired. (See January). Cut round the roots of evergreens, to remove about next July. Evergreens removed last autumn may have liquid-manure in fine weather. EVERGREENS, plant in mild weather, e. GRASS, roll and sweep weekly. GRAVEL, roll, and weed in dry weather, weekly, and try the concrete system. HEDGES (Deciduous), plant, b.; (Evergreen) plant, e. HYACINTHS, shelter, for they begin to appear. MIGNONETTE, sow in pots, and place in hotbed, or hothouse, and greenhouse, for succession. NEATNESS, attend to everywhere. PERENNIALS (Hardy), sow, c.; plant suckers, slips, and partings of roots; (Half-hardy) uncover, if frosts gone. PLANTING of flowering shrubs, complete. POLYANTHUSES, sow: earth-up with rich compost. POTTED SHRUBS, prune, shift, and dress the soil; pot off bedding *Geraniums*, &c., from stove pots. RANUNCULUSES, finish planting, b. and c. ROSES, prune strong ones, and leave some to prune in April for late flowering; manure with cow-dung. SOWING of tree and shrub seeds, complete generally. SUPPORT, with stakes, &c., newly-planted shrubs. TULIPS, shelter as they are now appearing. TURF may be laid, and see that plants are in heat for cuttings, such as *Lobelia*, *Verbenas*, &c.

Climbers, such as Honeysuckles and Jasmines, should be pruned and trained in the early days of the month. Reduce to moderate sized patches such plants as phloxes, asters, veronicas, &c., otherwise they will occupy too much space, injure their neighbours, and harbour vermin. Herbaceous plants should be planted out from nursery-beds into the borders without delay. Half-hardy shrubs, &c., may have their shelters partially removed, closing them up again at night, according to the mildness or inclemency of the season. D. BEATON.

GREENHOUSE.

AIR, admit freely among hard-wooded plants, such as *Ericas*, *Epacris*, *Diosma*, &c., when the atmosphere is clear, and the outside temperature from 35° to 40°. In damp, foggy, or frosty weather, it is better to use little firing, and keep the house more close, unless you have the means of heating, and so far drying the air before it is admitted—the drying, of course, to take place only when the air is loaded with moisture. When the fog gets into the house, light a little fire and give air, and it will soon be dispersed. All these plants will now want more water, but do not give it in dribblets; after doing it thoroughly, wait patiently until the soil is getting dry. Those in full bloom may have similar treatment, especially if the sun will raise the house to 55°. Those swelling and opening their heads must not be lower than 45°, with 10° or 15° more in the middle of the day. AZALEAS and CAMELLIAS, place those swelling and bursting their buds in the warmest end of the house, and you may remove them to the coldest end when in bloom. Supply such rather liberally with water. Those to be retarded, keep as cool as possible, and not so moist. BULBS, CINERARIAS, and PRIMULAS, in flower, assist with manure-water; the double *Chinese Primula* give a warm corner, as it is (especially the white) a splendid object when well grown. The night temperature of these should not be below 45°, if desired to keep them in full bloom, with 10° more in the middle of the day. *Cinerarias*, for blooming, do best at this season in small pots; those desired to make fine specimens in May and June, should not now be allowed to be pot-bound, or be stunted any way, but kept slowly growing. *Forsythia viridissima*, *Deutzia scabra*, and *Weigelia rosea* will yield their blossoms during this and the following month if slightly forced. Forced hardy shrubs keep at the warmest end of the house at first. *Begonia obliqua* makes a fine conservatory plant in winter, if the night temperature is seldom below 45°. CALCOLARIAS and GERANIUMS, keep at the best place for light and heat. All these soft-wooded plants require more heat than the hard-wooded ones; the former shift as necessary. The forwardest of the latter, stopped and shifted before Christmas, tie out and train. Place in flowering-pots those stopped some time ago, and now breaking; and stop more young plants for succession, to be shifted when the buds have broken again. *Franciscea latifolia* and *uniflora*, do well in a conservatory at this season, if they had previously received a little extra heat, after being allowed to become deciduous in the beginning of winter, the wood being well-perfected previously. FUCHSIAS, start some favourite kinds, if you can, in a nice, sweet, slight hotbed, as at this season they stand a little bottom-heat well, though, when fairly started, a medium temperature makes better plants than a high one. Cut them well down, and thin the shoots afterwards, to as many stems as you may require. The young shoots taken off, treated as cuttings in the hotbed, under a bandlight, or shaded, will make choice summer and

autumn plants. Repot those for the greenhouse by the end of the month, and prune back freely; those intended for cottage windows had better remain in their winter quarters for another month, keeping them rather dry, and as cool as possible, so that more room at present may be afforded to other plants. The same HOTBED would do for *seeds, cuttings, &c.*; and also for starting some *Achimenes*, *Gesneras*, and *Gloxinias*—the two former either in the pots by which they grew, or by removing the tubers, and placing them in pans, with light earth, until they grow a little; the latter either in their late pots before they spring, or what will do as well, in fresh pots and soil, so that, whenever they start, they take hold of the fresh material. For FIRES, PROTECTION, DRESSING, and CLEANING, see last month. *Insects* will now begin to be busy, and the best antidotes are sulphur vapour and tobacco fumigation, but, above all, cleanliness and good cultivation. SCARLET GERANIUMS: old plants, stored in pits, seeds, garrets, &c., examine. Remove all parts that are mouldy and damped. Dust with lime and charcoal, and expose more to the light, that the young shoots may break vigorous and strong. R. FISU.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES, proceed without delay to top-dress with rich, light, well-sweetened compost. Water them two or three times during the month, giving it only in the morning; give plenty of air on every mild day, but shut up early, and cover up securely every night, for a sudden frost would cripple the blooms. CALCEOLARIAS, repot; sow seed of, keep clear of insects, and give air daily to prevent damping off. CARNATIONS and PICOTEES, attend to with water and plenty of air in mild weather. CINCENARIAS, smoke frequently to destroy green fly; repot, middle of the month; give free supplies of water to, and plenty of air. CHRYSANTHEMUMS, put in cuttings of, latter end. DAHLIAS: look over the roots, and remove all decayed bulbs. Set some in a warm place to start growth, and afford cuttings. FUCSIAS, pot, latter end: put in cuttings of scarce sorts early, to afford good blooming plants in July. HYACINTHS, protect from severe weather, with hoops and mats. PINKS, in fine weather stir up the surface of the soil; press any that the frost may have disturbed down into the earth again. RANUNCULUSES, plant early in the month, choosing a dry day for that purpose. TULIPS, shelter from frost and heavy storms of rain, snow, or hail. VERBENAS, look to, trim off all mouldy leaves, give water to when needful, and plenty of air every day not actually frosty. WATER, give to all florists' flowers in pots. Should the green fly appear, promptly destroy it by tobacco smoke. Look after SLUGS in the frames or pits, and destroy them. T. APPLEBY.

PLANT-STOVE.

AIR, give freely on all proper occasions, but shut up early in the afternoon. CUTTINGS of various plants desirable to increase may be put in towards the end of the month. DIVIDE HERBACEOUS PLANTS, such as *Achimenes*, *Bilbergias*, *Tillandsias*, *Vriezia*, and *Hedychiums*, repot and divide also. IXORAS (specimen plants), repot; prepare young plants of, to make specimens by potting, tying-out, and giving more heat and moisture. INSECTS, diligently extirpate, by every means, such as cleaning the plants with a sponge, smoking with tobacco frequently, and washing the pipes with sulphur-water to destroy or keep down the red spider. POTTING: this is the month to go through the whole of the stock and repot them; let batches of such things as *Achimenes*, *Gesneras*, and *Gloxinias*, be potted from time to time. WATER, give freely as the plants grow and the days lengthen. SOILS, prepare for use by placing them under cover to dry and warm. SYRINGE: use this instrument almost daily, to give moisture to the air, and refresh and cleanse the leaves of the plants, and to keep down the red spider. Let everything be kept clean and sweet, let no decaying leaves be seen, nor moss appear on the pots or walls. T. APPLEBY.

ORCHID-HOUSE.

THE season has now come when the general potting of the orchids will be needful. Numbers will be growing, and then is the best time of all for potting. The materials must be provided in good time, in order to be in good condition. Fibrous turves of peat, the same of loam, sphagnum or white bog moss, charcoal, and broken potsherds, are the principal articles wanted. New or well-washed pots must also be provided. The turf should be brought under cover and placed where it will become partially dry. It might be laid upon the pipes or flues for that purpose. AIR will, during the month, be frequently necessary. To keep the house up to the mark of proper heat, good fires will be necessary, and if the sun should break forth, the thermometer will run up rapidly, and then air is necessary to reduce the heat. BLOCKS: the plants on these will require the syringe to be used daily; refresh such plants on them as need it, with new blocks, before the plants begin to push forth. BASKETS, renew when necessary. If the baskets are made of wire, give fresh sphagnum, and larger baskets if needful. DENDROBES will begin to show buds of bloom, give water to and repot them as they need it. HEAT: the season of growth for most kinds of orchids being come, the heat may be increased 10° by day, and 5° by night. INSECTS must be diligently destroyed. MOISTURE IN THE AIR, increase during the month. A dry atmosphere, now the plants are growing, will cause them to grow weak and spindly, especially *Dendrobies*; let the pipes, flues, walls, and floor be diligently wetted every day, especially in the morning. POTTING, proceed with without delay; if the young and tender roots push much before this is done, there is great danger of their being broken off. Watering at the root to plants growing must be given freely. Let all the walls, stages, shelves, window-sills, and the glass, have a thorough cleaning, to sweeten the air of the house. In potting, attend to the leaves and stems of the plants, sponge them well over in every part; nothing is so injurious to plants as having their breathing pores stopped with moss or dust. T. APPLEBY.

ORCHARD.

APPLES, prune, train, and plant. APRICOTS, plant, train, and cover, b. BLOSSOMS, cover directly to retard. CHERRIES, plant, prune, train. CHESNUTS, plant and sow. CURRANTS, prune, plant, b. CUTTINGS of all fruits, plant, b. DRESSING, carry out of all borders,

beware of the spade. FILBERTS, plant; hang catkins, and remove suckers. GOOSEBERRIES, prune, plant, train. GRAFTS, collect immediately; put them in a cold corner; in May commence operations at, e. LAYERS, make. MEDLARS, plant. MOSS, remove; use brine. MULBERRIES, plant. NECTARINES, plant, prune, train. ONCHARD-TREES, finish planting and pruning; top-dress old ones. PEACHES, as *Nectarines*; apply sulphur and lime-wash. PLUMS, plant, prune, train. PEARS, plant, prune, train. QUINCES, plant. RASPBERRIES, plant, prune, tie. SUCKERS, remove from all fruits. VINES, plant, prune, train. WALNUTS, plant and sow. Watch for the scale, aphides, and other insects, and try to utterly exterminate them. R. FERRINGTON.

FORCING-HOUSE.

Aia, admit on all occasions, if safe. APRICOTS: see *Peach*. CUCUMNERS, keep good linings to dung-heds; sprinkle bed often; air frequently; bottom-heat 90° maximum. In houses, train regularly, stop occasionally, and give liquid-manure, with a moist air heat of 70° to 80°. CHERRIES as *Peaches*, only a lower maximum—say 70° sun heat. CAPSICUMS and CHILIES, sow, b. FIGS as *Peaches*, only a higher minimum—say 60°. GRAPES, late, keep dry and cool; thin the berries. HEAT, in all cases, in proportion to, and advancing with, light. KIDNEY-BEANS, 65° to 70°; plenty of air, moisture, and a light situation. MELONS, sow; provide beds, &c.; air-heat, 70° to 80°; bottom-heat, 90° maximum. MOISTURE, constantly provide the air with, wherever fire-heat is used. NECTARINES as *Peaches*. PINES (*Fruiters*), rising, increase warmth and air moisture; liquid-manure to the roots occasionally: (*Successions*) still dry if in dung-pits. PEACHES, disbud, and pinch gross shoots; fumigate occasionally. POTATOES, get out successions. STRAWBERRIES, introduce plenty; keep moist air, frequent ventilations near glass; maximum 65°. TOMATOES, sow, b. VENTILATION, night and day, as long as air, moisture, and heat is secured. VINES, disbud early, and attend to thinning the berry; keep clear of all waste spray. Keep a mellow state of air, neither damp nor dry, but a permanency of air moisture. WATERING, attend to with regularity and precision. R. FERRINGTON.

KITCHEN-GARDEN.

ARTICHOKES, defend from frost. ASPARAGUS, plant in hotbed, and attend to that forcing. BALM, plant. BEANS, plant; earth-stir, and transplant from frames, e. BEETS, sow a little for early use; plant for seed, and dig up for storing any left in the bed. BORECOLE, sow, e. BROCOLI, sow a little, e. BURNET, sow or plant. CABBAGES, plant; sow; and plant for seed. CARROTS, sow on gentle hotbed for early use; attend early to thinning advancing crops, &c.; plant for seed, e. CAULIFLOWERS, attend to, airing, earth-stirring, removing all decayed leaves and slugs; plant out winter standing, should the weather be open and mild, attend to spring-sown crops (see last month); sow, if required; prick out. CELERY, attend to earthing-up, protection, &c.; leave for seed, and sow a little for early use. CHRAVIL, sow. CHIVES, divide and plant out. CLARY, sow, e. COMPOSTS, prepare and turn over. CORIANDER, sow. CORN-SALAD, sow. CUCUMBERS, attend to those forcing; prick and plant out; and sow in hotbeds. DILL, sow, m. DUNG, prepare for hotbeds. EARTHING-UP, perform when necessary. ENDIVE, still protect from wet and severe weather. FENNEL, sow or plant. GARLIC, plant. HORSE-RADISH, plant. JERUSALEM ARTICHOKES, plant. KIDNEY BEANS, sow in succession, &c. Keep a good supply of EARTH in the dry for immediate use. LEEKS, plant for seed; sow, e. LETTUCES, plant out from frames, &c., of the winter standing, towards the end of the month, and sow in the open border. If short of plants, sow in frames on a gentle hotbed at the beginning of the month. LIQUORICE, plant and dig up. MELONS, plant out for early crops; sow and pot off; attend to this sort of work on a kindly calm afternoon, just before shutting-up time. MINT, force, in hotbed; plant. MUSHROOM-BEANS, make in succession, and attend to those in bearing. MUSTARD and CRESS, sow in succession. ONIONS, sow main crops towards the middle to the end of the month; also plant for seed, if not done; and plant the Underground or Potato Onion. PARSNIPS, take up where left in the ground till now; plant or leave for seed; also sow towards the middle of the month, particularly in light soils. PARSLEY, sow. PEAS, sowings may be made both of early and second on the same day, where the soil works well, as the one will be found a good succession to the other at picking time; also to suit some unfavourable situations, it is well to sow in frames in small pots, or in sods of turf, which is by some thought best, to plant out when a good season offers; also attend to sticking, earthing-up, and protecting other forward crops. PENNYROYAL, plant, e. POTATOES, plant in hotbed of any favourite early kinds; this may be done from the first to the end of the month; also plant out during this month all the main crops, if the soil will admit of it, and plant whole sets in preference to cut ones; also look over those in store, often to keep shoots rubbed off. RADISHES, attend to (see January), and sow in succession either in border or hotbed. RAPE (for salading), sow; (Edible-rooted), sow. RHUBARB, sow in large pans, or open warm border, and attend to that forcing, either indoors, or cover up with pots, or tubs, and fermenting materials. SAGE and SAVOY, plant, e. SALSAFY, sow, e. in small quantity, for early use. SAVOYS, sow, m. and e. SCORZONERA, sow, e. in small quantity, for early use. SEA-KALE, attend to that forcing; cover up in succession. SHALOTS, plant. SKIRRETS, sow, e. SPINACH, weed, sow, m. SON-RELS, sow or plant, e. TANSY, THYME, and TARRAGON, plant, e. TURNIPS, plant for seed; sow, e. VACANT GROUND, dig; weed, &c. There is a right time and a right way of doing everything. Plant out in mild, open weather; wheel out manure, &c. on frosty mornings, or on a fine, dry day; make good use of the hoe on fine, dry days, in stirring among the various crops; look over all in-door stores in rainy weather; and tie the ends of new mats before they are applied to use.

T. WEAVER.

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MESSRS. E. G. HENDERSON and SON, of the Wellington Nursery, St. John's Wood, London, will commence sending out plants in April next, of their NEW SEEDLING FUCHSIAS WITH WHITE COROLLAS, BOTH DOUBLE AND SINGLE, also TWO STRIPED OR VARIEGATED COROLLA'D FUCHSIAS, and TWO UNIQUE FUCHSIAS with VIOLET AND BLUE COROLLAS. The last two were purchased of E. Banks, Esq., after having been flowered, the second season, and proved as flowers possessing unquestionable merits, and unequalled by other red varieties previously sent out. All the other varieties were purchased of W. Story, Esq., of Newton, in the county of Devon, who succeeded in introducing a Scarlet Fuchsia with White Corolla, which new feature in this tribe gives one of the greatest novelties that they have had the pleasure of seeing for many years. Mr. Story, being the raiser of this new Class, offered them to Messrs. Henderson for ONE HUNDRED GUINEAS, which offer they accepted. A faithful drawing of three of the varieties here offered has been taken by Mr. James Andrews, the well-known floricultural and horticultural artist; sketches from which have appeared in Van Houtte's "Flore des Serres," Verschaffelt's "Illustration Horticole," and will also appear in Turner's "Florist," for February. The dwarf, compact, and free flowering habits of the plants will be sure to please every grower of this tribe.

QUEEN VICTORIA (Story's).—Splendid wide sepals, beautifully reflexed, of a bright scarlet-crimson, and a lovely clear white corolla. Price 10s. 6d.

PRINCE ALBERT (Banks's).—Scarlet-crimson sepals reflexed, and rich violet corolla. This flower we consider unequalled by any, its reflexing properties being such that either more or less would be a fault; indeed the flower is perfection itself. 10s. 6d.

MRS. STORY (Story's).—Fine large scarlet tube, long wide sepals reflexed; corolla fine substance, and clear white. 10s. 6d.

ANUNCULÆFLORA (Story's).—Scarlet sepals and tube, with double white corolla, a flower not having that confused appearance as many of the double varieties are known to possess. This was considered the best of the only two double white varieties flowered by Mr. Story. 21s. The other double variety we do not appear to have received.

PERUGINO (Story's).—Fine large scarlet sepals and tube, with a conspicuous striped corolla of rose and purple flakes, handsomely reflexed and free flowering. 10s. 6d.

EMPERESS EUGENIE (Story's).—Wide reflexed petals of a rosy-crimson, the inside of petals having a violet shading; corolla fine white. 10s. 6d.

RAFFAELLE (Story's).—A beautiful variegated corolla with crimson sepals well reflexed, and of good substance; the colour of the corolla is a rich chocolate flaked with rose, free flowering. 10s. 6d.

LADY OF THE LAKE (Story's).—Fine deep crimson, with a bluish-white corolla, very pretty. 10s. 6d.

WATER NYMPH (Story's).—Bright scarlet-crimson globe stout wide petal, corolla fine clear white; an elegant flower. 10s. 6d.

Or if the set of nine be taken, the price, £4 4s. January 20.

FUCHSIA (Banks's Favourite).—Fine handsome scarlet sepals and tube; large and conspicuous flowers, with sepals finely reflexed; and a splendid blue-violet corolla of great substance. The stock plant being small, the number of plants will be limited. Price 10s. 6d.

MESSRS. E. G. HENDERSON and SON

were surprised to see an advertisement a few weeks back in the *Gardener's Chronicle*, from Messrs. Lacombe, Pince, and Co., of Exeter, offering two new Fuchsias, similar in character to those described above, and after a written communication with Mr. Story, it was thought necessary for one of the Firm to make further inquiries about them, and in consequence, Mr. ANDREW HENDERSON went to Exeter and Newton, where he was informed by a jobbing gardener at Newton, that he had received SEVEN POUNDS for them after (as the said jobbing gardener stated) he had been offered £20 for them by a Nurseryman in London, but whose name or address he did not know.

Messrs. E. G. H. & Son think the above explanations necessary, in consequence of a great number of their customers having ordered them at higher prices than are quoted above. This reduction is made in consequence of information which they have received, that leaves no doubt on their minds but that those to be sent out by Messrs. Lacombe, Pince, and Co., are similar in character to the above.

WELLINGTON NURSERY, ST. JOHN'S WOOD.

SUTTON'S COMPLETE COLLECTIONS, CARRIAGE FREE.

PARTICULARS OF THE SORTS AND QUANTITIES contained in Sutton's Collections of Seeds will be sent, post-free, on receipt of a stamped envelope with address.

By the perusal of this list it will be seen, that the very best kinds of vegetable seeds may be obtained in full quantities, and in proper proportions, for one year's supply of a large garden, for the sum of £3, and other complete collections of equally choice sorts for smaller gardens, at £2, £1 5s, and 15s. The economy of cost is by no means the only advantage gained by ordering one of these collections.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

IMPROVEMENT OF PARKS, MEADOWS, AND GARDEN LAWNS. SUTTON'S RENOVATING MIXTURE consists of true Perennial Grasses and Clovers, of the most nutritious and verdant kinds only. Price 9d per pound. Quantity required 8 lbs. to 12 lbs. per acre, according to condition of the pasture. It should be sown EARLY, on the old turf, harrowing first, and rolling or harrowing soon after the seed is sown.

SUTTON'S FINEST LAWN GRASS SEEDS, for improving old lawns, or making new ones, consists solely of the very finest and shortest growing kinds. Price 1s per pound, 2s 6d per gallon, or 20s per bushel.

SUTTON & SONS have for many years been engaged in laying down and improving permanent pastures, and will be happy to forward priced lists, &c., pre-paid, in return for one penny stamp.

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ESTABLISHED ABOUT HALF A CENTURY.

BASS and BROWN'S New Seed List is now ready, and contains everything which may be desired of the choicest new and other Vegetable Seeds.

Having given much attention for a considerable number of years to testing, by comparison, the various sorts of vegetables introduced, devoting a large portion of our land to such purpose, we are enabled to offer our seeds with confidence.

The collections annually supplied from our establishment have been highly approved, and the following are strongly recommended.

ASSORTED COLLECTIONS OF VEGETABLE SEEDS.			
No 1.	Collection for a large garden, containing twenty quarts of Peas, and all other vegetables for one year's supply	£	s. d.
No 2.	Collection in smaller proportions	..	2 0 0
No 3.	Collection ditto	..	1 5 0
No 4.	Collection of good kinds for a small garden	..	0 15 0

A FEW NEW VARIETIES OF PEAS.			
Epps' Lord Raglan, or Improved Mammoth, produces eight to ten Peas in a pod, and allowed to be the finest in cultivation	..	per quart	0 5 0
Epps' Monarch, new, tall Marrow, largest size Pea in cultivation	..	per quart	0 5 0
Fairbeard's Nonpareil, a delicious, new, wrinkled Marrow of great produce and fine pods, coming in before the Champion of England	..	per quart	0 2 6
Mein's Paradise, a most valuable early, very large Marrow Pea; pod large, long, and well-filled; fine-flavour. This Pea, though very large, comes in immediately after the Warwick	..	per quart	0 2 6
Hair's New Defiance, a fine variety of wrinkled Marrow; productive	..	per quart	0 1 9
Sangster's New Number One; Daniel O'Rourke; Hair's Dwarf Mammoth; Early Emperor, or Fairbeard's Conqueror; Burbidge's Eclipse; Champion of England; and other finest sorts. See Catalogue.			

The lists of Flower Seeds will be found, as usual, very select, including, also, Imported German Seeds, just imported, in splendid assortment.

Goods Carriage-free (not under 20s.) to all the London Termini, and all stations on the London and Norwich Colchester line.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and CO. have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES.		CROWN SQUARES.	
In Boxes of 100 feet.		In Boxes of 100 feet.	
Under 6 by 4	..	£0 12s 6d	.. 8s 6d
6 by 4, and 6½ by 4½	..	.. 0 13 0	.. 12 6
7 " 5, — 7½ " 5½	..	.. 0 15 0	.. 14 0
8 " 6, — 8½ " 6½	..	..	..
9 " 7, — 10 " 8, 12 by 9, } 12 by 10, 14 by 10 }	..	1 0 0	..

Larger Sizes, not exceeding 40 inches long, 16 oz. from 3d to 3½d per square foot, according to size. 21 oz. " 4½d to 5d " " " 26 oz. " 6d to 7½d " " "

SIXTEEN-OUNCE SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO MR. RIVERS, and of various dimensions, always on hand, at 20s per 100 feet.

Double-crown Glass of various dimensions in 100 feet boxes.

HARTLEY'S PATENT ROUGH PLATE GLASS, Packed in boxes of 50 feet each.

6 by 4 and 6½ by 4½	..	10s 6d per box.
7 " 5 " 7½ " 5½	..	12 0 "
8 " 6 " 8½ " 6½	..	13 6 "
9 " 7 " 9½ " 7½ & 10 by 8	..	15 0 "

For larger sizes a full List of Prices will be sent on application. Glass Tiles, ½ of an inch thick, packed in cases, containing 50, at £1 17s 6d per case. Packages 2s each extra, but allowed for when returned.

Glass Milk Pans, 21s per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps, Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

HORTICULTURAL GLASS WAREHOUSE, 116, BISHOPSGATE STREET WITHOUT, LONDON.

PYRAMIDAL PEAR TREES GRAFTED ON QUINCE STOCKS.—J. & J. FRASER have still to offer strong Trees of the above Pears; a descriptive Catalogue of the sorts may be had on application.

To prevent disappointment, early orders are requested, as the Stock of some of the varieties is getting low.

The Nurseries, Lea Bridge Road, Essex.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of heat and cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of two yards wide, at 1s 6d per yard run, of

ELISHA THOMAS ARCHER, 7, Trinity, Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

WEEKLY CALENDAR.

D M	D W	FEBRUARY 6—12, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
6	Tu	Staphylinus morio; moss.	30.081—30.081	56—50	W.	—	34 a 7	55 a 4	9 45	19	14 21	37
7	W	Omalium planum; bark.	30.061—30.031	54—35	S.W.	—	32	57	10 57	20	14 25	38
8	Th	Byrrhus semistriatus.	30.172—30.103	45—38	N.W.	—	30	59	morn.	21	14 28	39
9	F	Platysoma picipes; bark.	30.129—30.002	45—30	N.W.	04	28	v	0 12	22	14 30	40
10	S	QUEEN VICTORIA MARRIED 1840.	30.263—30.237	42—32	N.	04	26	3	1 32	23	14 31	41
11	SUN	SEXAGESIMA SUNDAY.	30.273—30.185	40—26	N.	—	25	5	2 54	24	14 31	42
12	M	Platysoma oblongus.	30.286—30.157	41—26	N.E.	—	23	6	4 16	25	14 31	43

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 45.°4, and 31.7°, respectively. The greatest heat, 65°, occurred on the 10th, in 1831; and the lowest cold, 3° on the 11th, in 1845. During the period 103 days were fine, and on 93 rain fell.

AFTER a considerable interval we now resume, from page 17, our papers on the different varieties of the Garden PEA.

abruptly at the point. They are of a bright green colour, and quite smooth, containing from five to seven Peas, which are somewhat oval, and not closely compressed, nine-twentieths-of-an-inch long, seven-twentieths broad, and the same in thickness. The ripe seed is white.

The seed was sown on the 4th of April, and the plants were in bloom on the 23rd of June. On the 30th of June the slats appeared, and the pods were ready to gather on the 21st of July.

THURSTON'S RELIANCE.

SYNONYME.—*Reliance Marrow*.

Many people are under the impression that this variety and the *Waterloo* are synonymous; but a comparison of the two figures must dispel any such idea where it has existed. Two more distinct varieties cannot exist, and the value of this is as great over that of the other as the difference between them is.

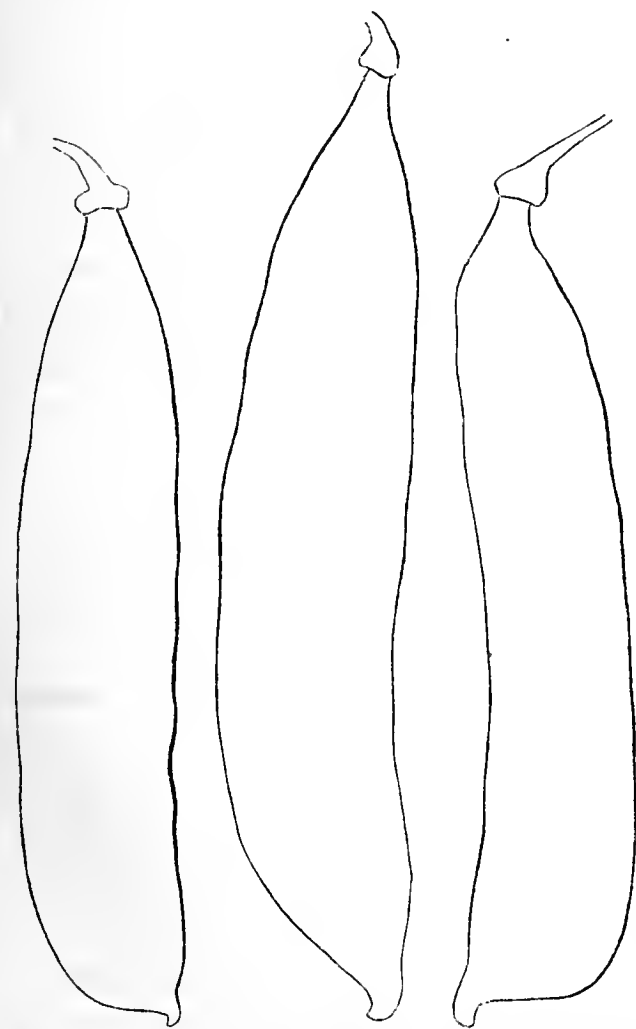
The plant is a strong and very robust grower, always with a simple stem, which is six to seven feet high. At three feet from the ground the pods begin to be produced, and are regularly placed at every subsequent joint, even to the extremity of the plant, numbering in all from ten to twelve on each. The pods are generally single, but sometimes in pairs, from three-inches-and-a-half to four-inches-and-a-quarter long, and three quarters-of-an-inch broad. They are very broad and flat, which shape they retain even when quite filled. The under edge is very much of a *Scimitar* shape, and the upper is slightly curved and tapering gradually to the point. They are of a deep, bright green colour, and the surface quite smooth, containing from seven to eight Peas in each, which are large—nine-twentieths-of-an-inch long, seven-twentieths broad, and the same in thickness. The ripe seed is white.

The seed was sown on the 4th of April, and the plants came into bloom on the 26th of June, and on the 28th the slats appeared. The pods were ready to gather on the 21st of July. This is a very far superior Pea to the *Waterloo Marrow*; it is a more abundant bearer, and very much better flavoured. If either of them is grown, this should by all means have the preference.

KNIGHT'S TALL WHITE MARROW,
and

KNIGHT'S DWARF WHITE MARROW.

The plant of *Knight's Tall White* is a very strong and robust grower, six to seven feet high, producing a



WATERLOO MARROW. THURSTON'S RELIANCE. KNIGHT'S TALL WHITE MARROW.

WATERLOO MARROW.

SYNONYMES.—*Victoria Marrow*, *Giant Marrow*, *Wellington*, *Royal Victoria*, *Tall Marrow*.

The plant is of a strong and vigorous habit of growth, having a simple stem from six to seven feet high. The pods are produced near the top of the stem, and are sometimes single, and sometimes in pairs, in about equal proportion. When full grown, they are from three inches-and-a-quarter to three inches-and-a-half long, and about three-quarters-of-an-inch wide; rather waved, and slightly curved on the upper edge, and terminating

stem which is as much branched as the *Scimitar*, or *Blue Imperial*, and possesses the valuable property of growing and producing pods till very late in the season. We have seen this variety subjected to a regular system of pruning by having the tops pinched off, so as to induce it to throw out lateral shoots, and by such a system a continuous crop of young pods has been kept up till late in the season. When full grown, the pods—of which the annexed figure is a representation—are from three-and-a-quarter to three-inches-and-a-half long, somewhat curved, terminating abruptly at the point, and full and plump. They contain from seven to eight Peas in each, which are always closely compressed. The ripe seed is white and wrinkled.

The plant of KNIGHT'S DWARF WHITE is only about two-feet-and-a-half high, and also very much branched, and a most abundant bearer; but the pod is not so long as that of the tall variety.

The seed of both of the above was sown on the 4th of April, and the plants bloomed on the 28th of June. On the 7th of July the blooms dropped; and on the 28th the pods were filled.—R. H.

THE Birmingham Society have just issued their schedule of Poultry Prizes for the next meeting in Bingley Hall. The early appearance of this document should be appreciated by every exhibitor and breeder in the United Kingdom; for we do not in any way exaggerate its importance when we say, that, proceeding from such a source, it merits the careful consideration of every committee that may have a Poultry Show in contemplation, whether as a first essay, or as the continuance of former exhibitions. The liberality, it is true, with which this present year has been distinguished, even beyond its predecessors, by the Birmingham Society, can be followed but at a distance. But the classification of the birds, a single instance, to be alluded to in its proper place, alone excepted, should guide the arrangement of all proposed exhibitions, as being based in the judgment of those confessedly the most able to undertake such a task, and supported as it is by the experience of most successful practical experience. If we are told that necessary considerations of economy forbid, in any instance, of fair prizes being offered for every distinct variety of the more important fowls, and the Birmingham list is limited to such; better at once to abandon the attempt, than, by an arbitrary and unwise selection of certain breeds or varieties, to abolish the first principle of such associations, viz., the fair competition of all poultry on equal terms. This, it is clear, cannot be attained, if, among other instances, the Hamburgs and Polish, as often happens, are jumbled together into a class for each race, since the judgment which prefers, on however good grounds, a pen of Spangled to one of Pencilled Hamburgs, or a White-crested Black to a Golden Polish, lacks one of the most important elements for correctness in such a decision; for such we certainly hold to be the presence in competing pens of the same main characteristic features. Hence the failure and disappearance of

several of our minor shows, whose loss is by no means to be deplored, since they ministered but too often to the bickerings and jealousies of neighbouring and rival districts, without conferring any benefit on the cause they professedly supported.

Tuesday, the 11th of December, and the three following days, are appointed for the exhibition at Bingley Hall, and the prize-lists and rules, with some few exceptions to be mentioned in their respective places, follow the example of the year just gone by.

Thus "Hamburgs," "Polish," "Spanish," "Dorkings," and "Shanghaes" reappear as formerly, with, and would that it were otherwise, "Brahma Pootras" as a distinct and separate race. Even did it seem necessary, this is not the proper place to renew our objections to their occupying this position. But the question may well remain with the simple expression of our continued conviction, that the birds hitherto shown under this appellation are nothing more or less than either Grey Shanghaes, or an illegitimate amalgamation in various proportions of the Shanghaes, Dorking, and Malay races. Have even the prize pens been always of the first-named character?

"The classes for single cocks" are wisely renewed, and after these "Game fowls," "Malays," the class "for any other distinct breed," and "Bantams" have undergone no alteration. We then, however, notice a change,—"*Gese*" being divided into two classes, "grey" and "mottled." At last, therefore, justice has been rendered to these well-deserving birds; the most profitable, under favourable conditions of locality, with which the farmer or cottager has to deal. We have long urged this extension of their class, and we trust so good an example will be generally followed. "Ducks" no longer include the "*Musk* or *Brazilian*" bird as a separate class, and the owners of these justly but little-esteemed birds, must exhibit them in the miscellaneous sub-division of the family.

Turkeys stand as last year; as is also the case with Pigeons.

The money prizes remain as formerly, £3, £2, and £1, being respectively the first, second, and third, except for "Pigeons," where the first and second take £1, and ten shillings each. But the committee have not been unmindful of what the celebrity of their past exhibitions would naturally require of them; hence, the seven six-guinea silver vases of 1854, have this year been augmented in both their value and their number, as will appear from the following notice. "Nine silver cups of the value of 'ten guineas' each will be awarded, instead of money prizes, for the best pen of Pencilled Hamburg, Spangled Hamburg, Polish, Spanish, Dorking, Cochinchina, Game, and Gold and Silver Bantams; and for the best four pens of Pigeons, to be exhibited specially for this prize."

"A gold medal of the value of ten guineas is offered by Mr. Otley, as an extra prize for the best pen of 'Polish fowl' of any colour."

Among the regulations we find the following insertion. "The council have determined, in order to

encourage the sales of poultry as much as possible, to permit the division of the birds in each pen, so far as to allow of the cock, or the three hens, being sold to different persons. The price of the cock, and of the three hens, separately, must be stated on the certificate of entry, in accordance with the instructions issued therewith."

The rules of last year, limiting the privilege of exhibiting to subscribers of not less than one pound per annum, and the number of their pens to four, of which not more than two are to be in any one class, while exhibitors of Pigeons only may enter six pens still remain in force.

The entries close November 10th, and the whole of the poultry must be in the show-yard on Saturday the 8th of December; but specimens will also be received on Friday the 7th.

The early appearance of this prize-list is most judicious on the part of the officials with whom these details rest. We say this, not merely on the ground to which allusion has been already made, of the benefit to all other Poultry Societies of the instruction thus afforded them from the most competent quarter, but also with respect to those who aspire to competition in the arena of Bingley Hall. These have nearly a year before them; so far, indeed, as the poultry-yard is concerned, it may be justly spoken of as that period in full. None of them, as may be gathered from the records of the past, can afford to rest on their oars; the energy, the skill, the outlay, and the perseverance that raised the Birmingham Exhibition of 1854 to its pitch of unexampled excellence, will receive no check in respect of very many of those whose names were then distinguished. Among those, therefore, increased superiority in their specimens may fairly be anticipated, and still more close will be the contest, and, consequently, honourable the triumph. But as there were many names new to poultry fame in the year just gone by, so likewise will it probably happen in that which is now before us; such persons, it is true, must labour hard, and in many ways, to overtake those who have trod the path before them; but the knowledge and skill of the first is so far made available for the purpose of the latter, that important aid is thus rendered them for achieving their own success.

There are none, however, who are any ways interested in the poultry movement, whether as breeders, or as exhibitors, who will not gladly render their ready tribute of thanks for the liberality and merit of the Birmingham prize-list, and do their best, as we would surely hope, for the attaining by our great leading Society of as well-merited a reward of their labours as was unanimously assigned them at the close of their last campaign.

ALTHOUGH Mr. Sturgeon's Sale was not brilliant this year, yet his 119 lots produced about £80; and this average of 13s. 6d. each is remunerative. The highest price was £3 7s. 6d. for a pullet (lot 100), and £1. 6s. for a cockerel.

Mr. Punchard's Sale was not so good. The highest prices at it were £2 12s. 6d. for a cockerel, and £2 2s. for a pullet. The gross amount for 130 lots was about £60.

SURFACE-DRESSING FRUIT-TREE-BORDERS.

It surely requires no argument, in the year 1855, to prove that abundance of surface root-fibres are of greater benefit to fruit-trees, in general, than deep or tap-roots; but it may require a reminder of the fact occasionally, and, perhaps, some persuasion, to induce our readers to persevere in encouraging the production of such fibrous roots. For my part, I should wish to apply a surface-dressing of three inches every two or three years, in order to facilitate the production of such fibres.

In extensive gardens this will require a good deal of material, and persons who have not well considered the practice may take an off-hand notion that the procedure is very expensive. I can assure them, however, that it is not so. It must not be supposed that I recommend dung, or expensive loams, alone or mixed; and I must here endeavour to show that a very moderate amount of those precious articles will suffice. As to organic matter, I have found nothing better than tree-leaves, especially after having been in use through a season for hotbeds or linings. But many persons possess not these, and they must remember, that what is commonly termed the "rubbish-heap," which every garden contains, possesses materials qualified, in case of emergency, to take the place of first-rate composts, or materially to assist in augmenting the bulk required for surface-dressing fruit-trees.

In order to work these materials up in an economic and useful way—these so generally-despised-materials—a steady view of the end desired must be kept in the mind. To enlarge on this collateral portion of the subject in view would be to weaken the case I have in hand. I, therefore, return to it, promising some day to handle the rubbish-yard in a practical way, and with reference to the various objects to which it is adapted.

The importance, then, of surface-dressings to fruit-trees has, in my opinion, in the majority of cases, whether in this country or others, been much undervalued. And if I should prove correct, how much more necessary, surely, must it be in the more dry and bright climates of France, Belgium, and other countries of hotter summers than in Britain?

It must not be supposed that to what are called shallow soils alone it may be beneficial; if such a soil require additional surface-roots in order to impart vigour to the tree, the tree in deep soils, especially if these soils are any way stagnant or sour, is equally benefited in moist periods, or what are termed bad seasons, by having a net-work of fibres near the surface to revel and delight in good pasturage, whilst the mass below is inert. But, if such should be the case, how are those trees situated which have their surface-fibres dug down by the spado every year, in the practice of what is termed "border-digging?"

And again, suppose that with this annual border-digging (the trees we will suppose Pears), that summer-pruning was neglected, and that the trees were in the most ungardening-like confusion until about the middle of August. Who would expect crops of Pears on such trees? They might have highly well-sounding titles, on expensive labels; they might be on Quince, or some other stock; and, to wind up, they might be bought of Mons. de Jonghe.

I saw, lately, in a contemporary paper, the following challenge, which seems rather hard for poor old Bull, coming, too, from the pen of a foreigner; it ran

thus:—"Is it true, or is it not, that for many years the crop of Pears in a great number of gardens has been defective? Is it true, or not, that, in general, the trees cultivated in the open ground, whether as Pyramids, Quenonilles, or standards, have been much neglected as regards pruning, thinning, and clearing from insects?"

This seems intended to convey a very broad hint, certainly, and for aught I can tell, not knowing the parties personally, strong feelings may form a part; of this I care little, I merely mean to urge, that if the extract ought to be answered in the affirmative, it is time for English Pear growers to look about them.

It is really amusing, sometimes, however, to see how the ball is tossed backwards and forwards; the two contending parties being, we will say, in round terms, the Southern and Northern. The former will say: "Oh! You talk of our fine climate! Climate, indeed, what say you to nearly a score degrees of frost in April? And our garden, too, known to be in such a bad locality." "We, too," says the Northern, "have had nearly a score degrees in April." The other says—"Yes; but your trees bloom so much later, and that's how you do it. Perhaps you retard the blossom. Very good; we do the same, but who can retard in such a warm climate?" Little do the Northerners believe that they can make all this exactly right. They think they know what cutting easterly winds are tolerably well. They, too, have sterile clay soils, bad subsoils, wet bottoms, and all the other things which go to increase the mischief.

But recriminations are of little value; the question resolves itself into this: does the climate of England differ so exceedingly, as to render a change in the first principles of fruit-culture necessary in different parts? Our readers will excuse, I hope, this way of putting the case, for really, both north and south have been loud in their complaints for years, and nothing seems settled.

Let me, before leaving the subject, advise two or three principles in practice to all parties, from the South Foreland to Johnny Groats. See that your subsoil is rendered dry; give your trees about two feet of a sound, mellow, and somewhat generous soil, but avoid manure in general. Rather build above the ground-level than sink much below it; select kinds adapted to your quarter, and give them surface-dressings about every three years. See that the spade is not too busy; and, lastly, be very assiduous in summer-pineching or pruning, and let it be done betimes. These, if I mistake not, will apply to most of our fruits. Other matters there are, but I almost venture to call them subordinate to these.

R. ERRINGTON.

GARDEN BOOK-KEEPING.—BEDDING-OUT.

THE beginning of February may be taken as the beginning of a new year in the garden. All the work that was done in January—except, perhaps, a little early forcing—would answer just as well if it were done in February; but now, no *work of the season* can be delayed, even for one week only, without future harm or hindrance.

The first and most needful thing to be considered by the flower-gardener, at this season, is the state of his bedding-out stock of plants. We will suppose, that whoever has the summer management of filling the flower-beds and borders, the vases and baskets, the block bank and rockery, and on to the farthest recess in the wilderness, and round the lake or piece of water, is already aware of the exact number of plants of each kind he or she will require to fill the different parts—not stingily, at first, as some do, but fully and thoroughly at once. The best head in the country can hardly think of all this without memorandums, and lists, and countings made in former years. The number

of cuttings which were made last autumn will be some index now to the gardener who attended to his plants himself through the winter; he will recollect how many may have died, one way or another; how plentiful some kinds were, and how scarce he happened to be of others; from which he can form a tolerably correct idea of how he stands for bedding stuff. But for my own part, I have no faith in tolerable ideas, on any subject, as compared with figures in black and white. I would have every bed in the garden numbered, every vase and basket the same; and whenever a pot-plant or a pinch of seeds was to be furnished, I would name the place after the numbers of the beds, and after every number and name of place, I would insert the number of plants in the memorandum-book, which will answer two purposes—a propagating book, and a planting book—which will correspond with a day-book in the shop; and the ledger may be part of the same book, beginning and going on in the order of the alphabet.

In the ledger part of the garden-book, every plant, however small or insignificant, ought to be inserted, as in a Dictionary, with a wide space left between every two letters, as between the ending of A and beginning of B; this is to take in new plants as they come, without the necessity of making out a new list, or a new book, every now and then. After every name, I would mark, in columns, the number of that plant that would plant the places so named; and in the last column I would sum up the whole number. Those who take their notions of book-keeping from mercantile routine, would here suggest that my ledger is sufficiently clear and comprehensive for all the purposes which I contemplate; but it is not so, by any means. My two books, or one double book, will have to supply the brains of several heads; and nothing in this world is more difficult than to provide for the exact quantity and quality of each brain, without posting into a ledger. On a small scale, however, and where the master or mistress keeps the garden-book, and gives the directions for the different parts, the ledger form is the simplest way to arrange the book. Then, when the cuttings are begun, a simple alphabetical list of the plants ought to be made out for the propagator, and the number of plants from the total column ought to accompany each name. This list ought to be pasted or nailed up in the shed, or where the cuttings are made and potted, so that the propagator can see, at one glance, how many plants are wanted of each kind. When the planting begins, another list, on strong card-paper, should be made of the numbers of the beds, the names of the borders, vases, baskets, walls, pillars, and so forth; and after every such number or name, the number of such-and-such plants to fill that bed or border, and so on. This list, in particular, saves a wonderful deal of bother, of time, and of one's patience, even if you propagate and plant all yourself.

Now, at the beginning of February is the right time to prove the column of totals in the ledger, which is equivalent to "taking stock." To do this in the simplest and easiest way, take the propagating list in your hand, and go to the *Geraniums* first, and to *Tom Thumb* the first of them; count the old plants first, and see if there are as many old plants as will fill all the vases, or centres of beds, or anything else named for old Toms in the ledger, and mark down the deficiency, or the excess, as the case may stand, and so on with every other plant in the list; always noting the number of old plants, then the number of young ones of the same kind; the two added together ought to be the same as the number of "totals" in the ledger; or if it comes short of that, you have so many to propagate; or if above the number of totals, you have so many of *that kind* to spare; and one of the greatest niceties in flower-gardening is to know how to make the best of extra numbers of any known plants.

This *nicety* is a kind of knowledge which few attain to, and which the great bulk of the gardening world never think about at all; they never can have too many plants; they can always dispose of the "overplus," as they think, and as they certainly do; but in how few cases can one see, in the autumn, that the best use has been made of supernumeraries at the time of planting-out. Take a case, and say that you are short of five *old plants* of *Tom Thumb*. We all know that a cutting of *Tom*, which was struck last August, cannot be made to stand in the place of the old plant from which it was taken, in a row, or bed, or basket, or vase. If you plant a row of *Tom Thumb* along the side of a walk, short or long, all the plants in that row ought to be as nearly as possible of one size; a very large plant here and there, and small ones, with three, four, or five big ones between them, would make the row look like a pig with one ear, neither one thing nor the other; if they were planted in the middle of the bed they would look worse; and if in a vase, they would look worst of all, unless they were exactly of the very same size, and continue, or made to continue, so all the season. Now the first consideration is to see that the loss of five *old Tom Thumbs* is not felt in any of the vases, or baskets; the next, to make sure that the centre of a bed did not show the deficiency; and the last question is, shall we make the outside row of that bed, or the row along the walk, like a pig with one ear, through this want of proper-sized plants?

We shall do neither the one or the other. You see, by our list, that we have more of number "50" than we require, and if you take five of them and put them in the middle of the *Tom Thumb* beds, no one will ever make out the difference.

Now, in a list of sixty or seventy kinds of bedding Geraniums, does it not require a great *nicety* to make sure of the one out of the number which will do in place of another? When we come to some hundreds of kinds of plants in a first-rate flower-garden, and find too many of some kinds, and too few of others, either by deaths, or by having made a different disposition of them since last autumn, the *nicety* and practical perception, so to speak, that can tell which to put for which, without blot or blunders, is, indeed, of the first water, and few attain to it, as I have just said; yet, without a good share of this knowledge, I hold it to be impossible for any one living to make a good telling disposition of an overplus of bedding-stock, so that instead of being fortunate in having so many plants to spare after the "planting" is finished in May, the chances are, that the *planting* suffers very much through the contrast between it and the planting of the spare stock.

I may as well say, that "No. 50" Geranium, alluded to above as matching *Tom Thumb*, is one of my own seedlings, which I never named, but some one who had cuttings of it called it *Shrubland Dwarf*, and there is plenty of it about by that name; the consultation is supposed to be between Lady Middleton and her old gardener. Whether by a system of book-keeping, or by rough guesses, every one ought to know, early in February, how the stock of plants for the ensuing summer stands as to numbers, and prepare, accordingly, what plants failed to give satisfaction last year, and what are to be tried this season.

In a very few weeks, if you send to the Nurseries for stock plants of any kind, of which you are in want, you will receive little morsels, from which no cuttings can be had for weeks to come; whereas, if you find out your wants in time, and send for them at once, you may expect old stock plants from last summer, which will be ready to put into heat when you receive them, to make a new growth for cuttings. Meantime, your own stock plants should now be put into some warmer place for the same purpose.

BLUE ANAGALLIS.

Since we had the little blue *Lobelias*, the blue *Anagallis* has not been so much planted as formerly; but a little bed of them makes a nice change, and where the soil suits them, they are always gay and cheerful in sunny weather, and no plants root easier from cuttings, from this time to the end of April, in a Cucumber-frame. One clear joint below the top knot of a shoot is all that is necessary to take, and nine or ten days is the time they ought to take to root, if the frame is in a good state. The smallest pots are the best for the cuttings, and bell-glasses of the same size as wine-glasses will do to cover them. When glass was dear, I have known the pantry being rumaged for broken glass tumblers, and all for propagation, but now there is little occasion for this; still, in such hard times, I would not throw away any chances of getting things done as cheap as is possible.

DOUBLE AMERICAN GROUNDSSEL.

The Double American Groundsel, of which there are two distinct shades of purple, is the next plant, after the *Anagallis*, that I would put into heat, as old plants of it do not do to be trusted in beds; every little morsel of them root as freely as anything all through the spring. The third is the variegated *Alyssum*, the best white edging plant of that size and style in the country; but somehow or other it never makes a nice bed by itself; it must have some contrast, and that from some dark purple flower is certainly the most telling contrast for it. A small circular bed, five feet through, and planted with the darker variety of *Senecio*, or American Groundsel, with a border fifteen inches wide, of this variegated *Alyssum*, would make the very richest bed of the kind, because the two grow exactly alike, running their shoots into each other in all directions, yet keeping a uniform surface throughout, and their relative growths never less or gain all through the season, but the purple is over by the middle of September. However, a lot of the *Purple King* Verbena should be kept in pots, to be plunged or planted as soon as the *Senecio* looks seedy, then both would last till the end of October. But why not plant the Verbena in May, to save this trouble?

That notion about *trouble* I shall never give in to—no, never—in the flower-garden, as long as I live. I hold it to be one of the greatest charms of flower-beds, and smart dresses, to be changed as often as one's means will allow of. If I could manage it, I would alter the arrangement of my own flower-beds every month in the year; but as that cannot be done, we must be satisfied with as many changes as are practicable. In the old style of mixed planting one could have a little of everything, and nothing could come amiss, therefore that style will never go altogether out of fashion; but if we would allow ourselves to provide for and take the trouble of renewing many of the flower-beds, as often as plants, suitable for that purpose, could be depended on, many of the flower-gardens might be made far more interesting than we see them. "The beauty of this place never flags; because, come when you will, you will never see it twice alike," would be the highest compliment that you could pass on the best flower-gardener in England.

BEDS OF PURPLE VERBENAS AND DAHLIAS.

The best purple bed of Verbenas which I have seen was filled with *King of Purples*, a new kind last season, which may not be as well known yet as it deserves to be. A couple of plants of it put into heat just now would work off enough for a tidy bed. *André* is the next best I know; and the third is *Emma*; and the variegated *Alyssum* would make the best edging for either of them.

I lately had a good introduction to a French lady, who is particularly well versed in all that is done in flower-gardening in this country, and she told me, that the

richest and best contrasted bed she has seen last season was bordered with this variegated plant. It was a large, round bed, raised considerably in the centre, and was entirely filled with the purple or dark purple *Zelinda* Dahlia, trained down towards the sides, but upright in the middle, and bordered with an eighteen-inches-wide border of this *Alyssum*. There was a small circular bed of this *Zelinda* at the Crystal Palace last summer. As you went up the Rose mount from the centre of the garden, it stood on the right hand, near the bottom of the rise; the plants were trained, but they stood too far apart to make any striking appearance. It was a good hit lost, for the thousands who saw it might be more prejudiced than otherwise against this, the best of all the Dahlias for the flower-garden, when one knows *where* to introduce it.

CUTTINGS OF GERANIUMS.

All those bedding Geraniums which do not strike from cuttings during the blooming season should now be put into heat, and not allowed to rest until a full stock of plants for next summer are on their own roots. The least known of these is *Touchstone*, an old kind, which was all but lost a few years since, but is getting up again as fast as they propagate it. A full tale about it will be found in our volume for 1852. *Purple Unique* is another that ought to be propagated in February and March. *Lady Mary Fox* ought also to be from spring cuttings, as although it will root well enough in summer, such cuttings, or rather plants from such, will never be so full and bushy, as they follow rather after the lanky state of flower-wood. The new variegated sport from the *Prince of Orange*, and called *Odorata*, is another of this class, and must be increased in the spring. I long to see an edging of young plants of this, as the variegation in the leaf is different from all other variegated Geraniums. It was a radical mistake to have called this plant by a new name. The *Prince of Orange* is the best known of all the very old Geraniums, and *Variegated Prince of Orange* ought to have been the name for this sport; then every one would know, or could easily find out, what it was, and what it was good for; whereas, thousands decline to buy new plants for fear of being deceived. The *Golden Chain* Geranium need not, and should not, be put into heat for cuttings; the only way to get abundance of cuttings from it is to plant it out-of-doors in summer; never to make a cutting of it in summer or autumn, but to leave the shoots till about the end of February, when they will root easier than any other kind, provided the cuttings are in pure sand and nothing else. I have struck pieces of the *Golden Chain*, which are five and six years old, as easily as last summer's growth. You may doek it down to the stump, and every inch will make a cutting; it would be waste to make them longer till you had 500 plants of it, at least. Very probably, they have 2500 plants of it by this time at Shrubland Park, and it is questionable if all the rest of it in Europe would count so much. D. BEATON.

ERECTING GREENHOUSES AND OTHER GLASS HOUSES.

"THE spring is coming on, and among those who intend erecting greenhouses are myself and two friends; but in this rural district we have no greenhouse builders, and we have a difficulty in obtaining any plans; much more are we unable to get plans with late improvements. Do you consider it would be proper for the 'Amateur Gardener's Teacher,' for such is your periodical, to give a short series of papers, with plans of good greenhouses and conservatories? I think it would be generally acceptable. My own wish is to erect a lean-to facing

the south, but with sides open east and west; about twenty-three feet long. (How wide should it be in good proportion?) I should like to have a small portion, say eight or nine feet, glazed off, to keep at a higher temperature, and in this portion to have a pit for forcing Roses, cuttings, seeds, &c. I should wish to know whether hot-water or flue is the best, and if a tank would be required. May I grow Grapes in the larger part without damage to the general stock of flowers, such as Geraniums, Fuchsias, Achimenes, &c.? I should not want them very early. Do you recommend Hartley's rough plate, or other glass? I am told that there are plans by which the cost of these houses is reduced to a comparatively small amount, such as by having rafters above, and not sash-lights, &c.; but I do not know whether such is generally approved. There would be such a number of questions to ask, that I dare not venture to say more, but hope you will give us working plans and descriptions of these necessary buildings, remembering, at the same time, that which I hope you pay largely to, the double Income-tax. May I, now that I am writing to you, remark that 'Advertisements' are a very useful part of a Gardener's Magazine. Whether your charge is too high, or whether there is other reason, I know not; but there are not half the number of advertisements which we wish to see; consequently, we do not buy many things which we otherwise should. I only wish the gardeners would describe as much as the owners do those 'tiresome Coehins.'

"*Summ unique*,' however, and I think the professionals would do better if they set forth their articles to the amateurs more than they do.—W. F. G."

We have been asked to publish a series of working plans for such houses as our correspondent alludes to in the above letter; but there are several reasons why this cannot be acceded to. First, the expense of correct drawings, and then of engraving them, is considerable. Secondly, they would be of comparatively little advantage, because every builder of a small house would imagine that there was something so peculiar in his own position and circumstances as to demand a peculiar working plan for these identical circumstances. Thirdly, almost every imaginable form of house has been discussed in these pages, and yet the inquiries every week are just as numerous as ever, which I am heartily glad of for two reasons—the one, that the double Income-tax has not quite knocked out the love of tender plants, and because this is a standing subject, to which we may at any time revert. Fourthly, I have, for myself, an objection to enter into such specifications of such plans as to price of materials, &c., so as to calculate what a house of a given size would come to,—as any thing of the kind I have hitherto approached has brought upon me whole packets of letters, some averring that things could be done for much less than my calculation, while others as strenuously insisted such works could not be done by them for double the money; and perhaps both parties might be right, so much does the cartage and carriage of materials, in some cases, enhance the value and expense of work. And the last reason why such plans are now less necessary, is, that the matter is so thoroughly understood, that a common bricklayer and carpenter can, from spoken instructions, manage the whole matter easily. If good workmen, however, and those used to the work, are not to be found in the neighbourhood, the best plan, for economy and securing good workmanship, is to contract with a house-builder, in some town, or in London, for the whole affair *without any extras*—such as those who advertise in these pages—and the result generally will be satisfaction. No carpenter in the country, without the benefit of a saw-mill and other conveniences, could make sash-bars, &c., in competition with those who have all the helps of machinery to aid them.

Now, supposing the house to be twenty-three feet long, there is not a possible rule that can be given as to the most desirable width and height of the house, further than the wishes of the proprietor, and what he wishes chiefly to grow in such a house. What would be a very common and a very convenient form for such a house twenty-three feet long, would be a width inside of from ten to twelve feet; height in front six feet; height at back ten or eleven feet. Suppose that two-and-a-half to three feet of this front height is a nine-inch wall, and that this wall goes round the ends of the house, and that all above that is wood and glass, and you have the outline of the house at once. Suppose that along the front of the house, just level with the brick-work, you have a shelf some eighteen inches in width, then a path of three feet, and the back part of the house supplied with a stage, or stand, or pit, and the whole thing stands before you. A door, three feet wide, in each or one end, eighteen inches or so from the front, just to escape the shelf when opened, reveals the whole affair as well as the finest copper-plate drawing; as it will at once be obvious, that from the height in front to the height of the back wall will be the hypothenuse line for the rafters and their sashes, and that will be from eleven to thirteen feet, according as the back wall rises less or more above the front one.

Having got the brick-work up for such a form of a house, the next thing is to get a wall-sill all round, except at the doors. That at the end may be of much smaller dimensions; but that at front should be, at least, good wood six inches wide and three inches deep. Studs should be mortised into the wall-plate at least four inches deep and two-and-a-half inches wide, and as many of them as will permit one being at each end, and the others divided so as to receive the five or six sashes between them, the studs being so far cut in on the outside as to allow the sashes to fall in between them. These studs should again be mortised into a wall-plate at the necessary height, some six inches by four or five, and on this wall-plate the rafters are to be fixed in front, and at the back wall behind. The rafters cannot well be less than six inches by three, the depth inside being rounded off not to obstruct the light. This would be quite sufficient if the sashes were in one piece, or if there were two pieces in the width of the roof, and only the upper one was intended to slide. If both were intended to be moved, the rafters would require to be an inch more in depth, as the top sash would require a cut in the side of the rafter of three-quarters-of-an-inch in width, and two inches in depth, in which to be secured and slide freely; while the lower sash would require just as much more, in order that the top sash may pass freely over it. This, it will be perceived, with the exception of the portion of the rafter left in the centre, takes away four inches of its depth at front. If the sashes of such a roof for a twelve-foot-wide house were fixed, the rafters need not be so strong; but, then, means must be taken to ventilate at the point of the roof, or in the back wall, by other means; and if such a thing can be easily done, as will be seen by-and-by, there would be no necessity for rafters at all.

For such a house, five or six sashes would be necessary, and the ends and sides of these should be made of good wood not much less than two inches square. The front pieces may be two inches-and-a-half broad and one inch-and-a-quarter deep; so that the water from the glass may pass easily over it. The sash-bars, for glass averaging sixteen ounces to the foot, should not be less than an inch-and-a-half in depth, and a little less than one inch at the widest part; one-third of its depth, where the flat groove is cut out of the glass, to be bedded on. That flat part should be between a quarter and half-of-an-inch on each side of the sash-bar. The remaining part, one inch in depth inside the house, should

be bevelled off, so as to show a base a quarter-of-an-inch in width, which gives the house a much lighter appearance.

When the sashes are put on, some people serew a thin piece of wood, about three inches wide, on to the middle part of the rafter left between the sashes outside, chiefly to prevent the rain beating in there; but, as being cheaper, lighter, and better every way, it is preferable to have a deepish, narrow groove cut into the rafter below the place where the sides of the sashes rest, and this will allow all the moisture that finds its way in there to glide downwards, and find its exit at the front of the house.

Where the look of the structure is of great consequence, it will be best to have the sash-bars for the ends and front of the house done in the window-form, instead of the garden-sash way. The latter mode will be the cheapest.

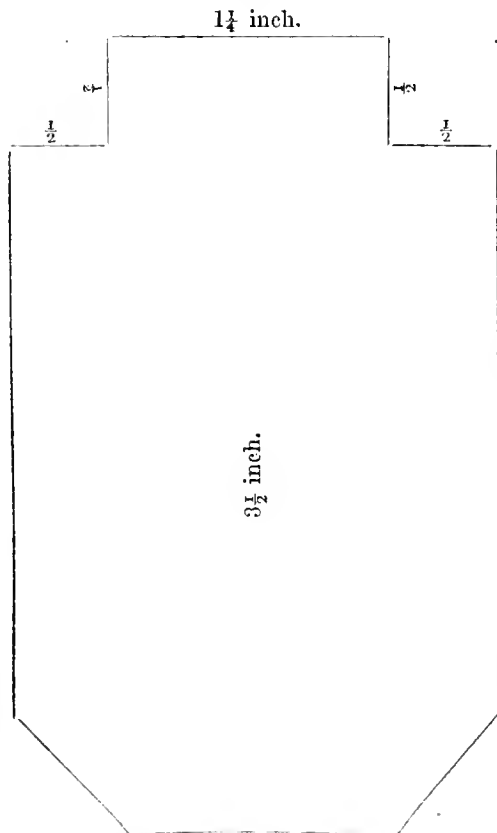
The whole of the above is written upon the supposition that the house is to be a very ornamental one, and that air is to be given by opening the front sashes, and sliding the top sashes, if the roof is to be in two divisions. It has been intimated, that if air has to be given by ventilators at the point in the roof, or by openings in the back wall, there would be no necessity for the roof-sashes being moved. Were it not that it is desired to have two temperatures, in other words, two houses, by means of a division in a length of twenty-three feet, one ventilator in the centre of the roof, with windows to open at each end, near the top of the house, with the opening of the doors in extreme cases, would be quite sufficient, if the front sashes could be opened. Two divisions, to be kept at different temperatures, prevent this draught through the house, and, therefore, each division must have its mode of ventilation separate and distinct from the other. Provided the sashes are fixed, and either wood or glass ventilators are fixed at the roof-point, moveable at pleasure, or in the back wall; then, if economy demands it, the front glass may also be fixed, and the air admitted by openings, covered with thick doors, in the wall below the glass; and then, supposing the hot-water pipes are placed beneath the front shelf, the air would be somewhat heated in cold weather, when it was necessary to give air at all in front, before it came to circulate among the plants.

The description of the sash-bar given is the common one, the putty being placed on an inclined plane to the glass to throw off the wet. The ground sash-bar of Sir Joseph Paxton has this advantage, that instead of the sash-bar being bevelled off above the glass by the putty, a groove is cut for the reception of the glass, about a quarter-of-an-inch deep, and as much in width, less or more, according to the size of the glass, and then the space above is rounded off something like the line across the top of a full-grown mushroom, which acts as an umbrella in keeping the small quantity of putty used secure from wind, sun, and wet. When made by machinery, these ground sash-bars would present little difficulty.

So much for the general mode; and now for the double Income-tax view of the question, combining both economy and elegance, if a little extra expense be gone to. Nothing can answer better than the mode our correspondent refers to, namely, dispensing with sash-bars altogether, and increasing in their stead the number of light rafters,—or you may call them, if you choose, large sash-bars. Such a system was entirely owing to the duty being removed from glass, so that there was no necessity for having a forest of sash-bars, in order to work up the cheap, petty little chips of glass, as the largest convenient squares of British plate may now be procured as cheap as the very chips from the glazier's yard formerly.

Mr. Rivers, I believe, was the first to introduce such a

mode of glass roof in his Orchard houses, using for this purpose glass in large squares, at something like 3d. per foot; and ensuring great cheapness by using wood in rather a rough condition. If his great rival in the Roso line, Mr. Lane, of Berkhamstead, was not equally early in moving in this direction, he very soon followed in the same direction. Several years ago, I recollect noticing, in this work, a huge double span-roofed house so constructed, and several more have been constructed since. These I shall see some day, and report progress. As I could not get conveniently to Mr. Lane before writing this, I wrote to him, making some inquiries, as to the size of the rafter, or sash-bar, he now uses; and how great a width of roof he would consider these light rafters capable of supporting sixteen ounces to the foot glass, without any support in the middle, and he kindly sent the following answer. "The annexed is the end of the rafter you enquire about. I make them now three-and-a-half inches deep, by two-and-a-quarter inches wide. Each rafter is fixed twenty inches apart. The size of the glass is twenty inches by twelve inches; and weight sixteen ounces to the foot. We use narrow slips of wood, with a screw in each rafter, to keep them in their places. We give air by means of a small frame between each rafter at top at intervals. I do not think such rafters safe beyond thirteen feet without support."



From the annexed form of the rafter, it will be seen that a space is cut out from the upper end of the rafter, on each side, of half-inch square, on which the glass is laid, and fixed with putty in the usual way. It will be seen that the top of the rafter seen above the glass will be one-and-a-quarter inch, which will make little appearance indeed, in comparison of the cumbrous bulk of rafters and sash-bars. Any carpenter can easily make such rafters as these, and the great saving consists in the small quantity of wood required. Very good glass can be procured, twenty inches long, to reach from rafter to rafter, and twelve inches broad, from three-pence per foot, and onwards. The nearest carpenter, or wood-merchant, could tell how much the wall-plates, tiles, and

rafters, &c., would cost. Hartley's Patent glass we should prefer for the roof; but it will cost a little more. Crown glass I would prefer for the ends and front, because you can see everything so nicely through it. If economy, however, was looked to throughout, with the exception of the studs to support the wall-plate, the glass in the front might be the same as that in the roof. Air could be given by the front wall, or in moveable, small frames, fixed between the rafters, just as at the roof-point; nineteen by eleven inches would give a great amount of air, and avoid the banging of sashes, and the consequent destruction and smashing of glass.

It must be at once conceded, that such a mode is the cheapest and best for building houses for plants, although, however, there is a prejudice for such lean-to houses with upright fronts, half of which, if not two-thirds, shall be glass; yet, when mere plant-culture, and the greatest amount of internal available space to be procured are concerned, a rather flattish span-roofed house, resting on walls some three to three-and-a-half feet high in front, will be far preferable to any lean-to with upright sashes in front. If the house, both at the back and the front, were from one-and-a-half feet lower than indicated, and the front glass sloped outwards diagonally, more space would be enclosed, and then the front glass, whether of British plate, or of Hartley's Patent, would not strike the eye so strongly in comparison with Crown glass as if it had been upright.

Once more; Supposing these rafter sash-bars are decided upon, two stronger rafters will be wanted to bind the house, one at each end; and if another is not used in the middle, it will be desirable to have a flat bar of iron, passing along the middle of the house, from one end to the other, and fastened by a screw to each rafter.

And, again; As our correspondent wishes to have a pit, at least, in one division; and as much of the interest and usefulness of such a place consists in getting easily round it; I would advise that the house be not less than from twelve to fourteen feet wide; and if as wide as the last (fourteen feet), or a foot or two wider, then you would require at least three iron columns to support the rafters; or rafters some twelve feet in length, fixed to a wall-plate in front, and to a ridge-board at the roof-point, while another short rafter would go from the ridge-board to the back wall, in a hipped-roof form. This mode would have the advantage of giving good width, and yet a low roof. With such a width there will be plenty of space for a broad shelf in front, a good walk, a nice pit, or stage, and a walk and border behind, in which you may grow what it pleases you against the back wall, and have the pleasure of examining it as well. With a pit in one division; a flat stage, or even a pit covered with boards, or sand, would look best in the other.

If our correspondent fixes on either of these modes, he cannot too soon give orders either for sashes or these sash-bar rafters; as the more seasoned the wood is, and the longer they are made before being used, the better they will be. They should be primed and painted at least once over before glazing. He will act wisely in securing putty that has been well sweated, and made of the proper materials, and at least six or eight months since it has been made. There is no reason why a groove should not be cut to receive the glass in those sash-bar rafters, as well as in the small sash-bar in common use. There would thus be a saving of putty; but some experienced men say, that the trouble of getting out a broken square is greater than all the advantages received. If the glass is to be ordered cut in boxes, it will be desirable to have it all of one size; and, therefore, before sending to the glass-merchant, care should be taken that either upon the wall-plate of the house, or on a plan correctly representing it, the position of each of these sash-rafters should be taken, and the distance

between them made exactly alike, and then the measurement taken for the glass. It will be sent cut exactly to your dimensions, especially if you do not plague the cutter with fractional parts of an inch. I mention this, as I know of several instances where the glass-cutter was blamed for not sending the sizes correctly, when the measuring-rule demonstrated that the fault lay with the carpenters in not fixing the rafters exactly at the same distance from each other.

Our correspondent may rest assured that his questions will always be attended to, and as soon as possible, provided too many do not come at one time. These questions, in fact, are most useful, as enabling us to see what is wanted. To a few of these I will now shortly refer.

The glazed division—and for this the cheapest patent plate, about 2½d. per foot, would do admirably,—is a good idea, and you may keep this division as much higher in temperature than the other as you like, by having more heating power, and the means of heating it without the other. For such purposes as you contemplate in your pit there will be no comparison between hot-water pipes and flues. The latter are apt to get out of order; gases escape from them noxious to vegetable life, and much moisture about them makes the bricks too soft and porous. In such a house, with bottom-heat in your pit, you could grow Cucumbers, or Melons, Vines in pots, &c., when the bulk of your propagating and flower-forcing is over.

The question of a tank *versus* pipes for bottom-heat has been rather fully discussed. One of the cheapest and best modes of heating a house by a tank is given near the end of the second volume. It is quite a question, with me, of expense, and I would prefer pipes laid in and covered over with rough rubble, in preference to tanks, because they will generally be found cheaper; while funnels for pouring water among the rubble will always give what moisture is requisite. If, in the early part of the season, the pit was filled with tan above the rubble, you would have a nice material for plunging propagating-pots in. Other materials would also do. If no fermenting material was easily procurable, rough gravel should be placed over the rubble of flints, brick-bats, &c., then finer gravel, and then sand, for setting the pots on, or plunging them in it.

For such a house as we have proposed you would require a boiler, such as frequently is advertised in these columns as costing from four to five pounds. You would require a T piece for the floor, and another for the return-pipes. The boiler should be fixed at the hottest end of the house; one flow and return should pass along the front of the house, and another flow and return should pass through the propagating-pit. I should recommend that the pipes be four-inch ones. It would be quite as well to keep the atmosphere heating-pipes as near the floor as that they will not be much above the pipes to be placed in the pit. These, or rather the one pipe, should go round the pit some twelve or fifteen inches from the sides, and then it will be equally heated. If so, the pipe should rise gently for half its length, and then fall gently to the boiler. A small air-pipe, as advised last week, should be inserted in the highest point. If this T piece should be exceptionable, or the connecting-pipe would be in the way of a path, &c., then a lead pipe may be used, as lately recommended, for crossing beneath a path. If desirable to have a tank, instead of pipes a leaden pipe connected with the flow and return would be sufficient. However done, it will be advisable to heat the pit, if desirable, without heating the pipes for atmospheric temperature, by means of stop-cocks. These stop-cocks will be necessary at the point of the division, so as to regulate the heat of the cooler house. Many modes are used for this purpose. It is evident that a junction piece must be fixed here, so that the circulation in the warm house may be perfect in itself.

The question as to the growing of greenhouse-plants, and getting good Grapes in the same house, has also met with considerable attention. It must be seen, that the whole of such attempts is merely a compromise after the Vines get fairly into leaf and when they approach the ripening period. After such periods, the Geraniums should be confined to the front shelf. Fuchsias will do tolerably until when in bloom; and Achimenes, and all the tribe of summer-plants, will do best of all, until the house requires to be kept a little dry for the Grapes, and the tenderest of the greenhouse-plants require house-room. There has already much been said how to make such houses of all work as useful and interesting as possible. I have such sympathy with all who attempt many things with little conveniences, that I feel pleasure in answering any particular question. Other matters relating to Roses, Fuchsias, &c., must wait a little; all will be alluded to in good time. Those who wish for early Fuchsias, may get them into a heat of 50° to 55°, as soon as they like. We may repeat, we can say nothing new on this plant. R. FISH.

CEPHALOTUS FOLLICULARIS.

THE NEW HOLLAND PITCHER PLANT.

This elegant little Pitcher Plant is a very suitable companion to the *Dionaea muscipula*, or Venus's Fly-trap, the history and culture of which the reader will find at page 163 of our twelfth volume. At the time when I wrote that paper, I had this plant in my mind's eye as a subject worthy of writing about, and commending to such readers of THE COTTAGE GARDENER as may have the means and inclination to cultivate it, *Sarracenias*, and other similar plants.

The *Cephalotus* derives its generic names from *kephalotes*, headed-flowers produced in heads; and its specific name, *follicularis*, eared-bag, the pitchers having such a resemblance. It is a native of boggy marshes, in or near St. George's Sound, about six hundred miles from Sydney. This is the only habitat, or place where it is found wild.

The plant forms a little tuft, and the pitchers are provided in close clusters, sitting, as it were, in a circle round the centre, from which the flower-stem rises, growing about a foot high, bearing a compound, terminal spike, or head of white flowers, not particularly showy; its great interest and beauty lying in its pitchers. These grow about four or five inches long, the lower part having a smoothness like a silk-bag; the upper part is curiously and beautifully thickened with a braided border, the edges of which are often of a reddish hue. It is one of those plants that the owner regards as a treasure pet, to be doubly cared for, and exhibited as one of the lions of his collection. Cultivated properly, it is not difficult either to grow or to increase, and yet I do not often meet with it, excepting at such places as Chatsworth, Kew, Mr. Rucker's, at Wandsworth, Mrs. Lawrence's, at Ealing Park, and one or two Botanic Gardens, and two or three of the best London Nurseries. The scarcity is, no doubt, owing to its culture being so little understood, and, consequently, it is lost by being treated in the ordinary wholesale way, to which, in too many places, all plants are subjected. I shall try to show the way in which it ought to be cultivated, and then, perhaps, I may see it more freely distributed. It is not very costly, and, therefore, its price need not prevent its introduction into every stove in Great Britain.

Culture.—I would not recommend any one to purchase this rare plant before May, nor after September, because if it travels in cold weather its growth is stopped, and, probably, its life destroyed during the

transit. Perhaps the early part of summer will be the best season, because then it will have the warm weather to enable it to get over the journey. Having procured a nice, young, healthy plant, place it under a bell-glass, just in the pot it arrives in for a few days, to recover the effects of the transit, then be on the look-out for materials to repot it. I have found it to thrive well in white bog moss (sphagnum), chopped small, and the dust sifted out through a very fine sieve, and sandy, turfy peat pulled in pieces with the hand, sifting the dust out of it also, and, lastly, half-decayed leaves used as rough as possible. Mix these in proportions of two of the first and one of each of the latter. Throw in amongst this mixture a goodly lot of broken garden-pots, in pieces about the size of your little finger's end. Mix all well together, and the whole will form a compost open to allow the superfluous water to pass off freely, and yet the moss will retain moisture enough to keep the roots constantly supplied. Place this compost in a warm place, to get thoroughly aired throughout. To pot any plant in cold, wet soil, is almost certain death to it. (I have no doubt many plants coming from a nursery, where they have been subjected to a high state of culture, suffer considerably by immediate repotting in compost in an unfit state.) Having got the compost into a comfortable state, neither wet nor dry, and moderately warmed, then look out a nice clean pot, a little larger than the one the plant has arrived in; let it be well drained, for though this plant is a native of a marsh, it cannot live in stagnant water; there is something in such water that is poisonous to the roots in pot-culture; probably some gas or other is generated that is injurious to vegetable life. After the pot is drained, turn the pot containing the plant upside down, and place one hand to catch the ball, give a gentle stroke on the edge of the bench, and the ball will come out entire. Examine the old stuff, and if it appears sour and sodden, remove the greater part of it carefully, preserving every root, however small; also look out for and remove all worms or slugs, if there are any, then put in some compost in the fresh pot, hold the plant in the centre of it with one hand, and fill in around it with compost till the pot is full, press it down firmly, and fill up again. Then take a larger pot, and put some green moss at the bottom, sufficient to raise the pot containing the plant rather above the rim. Pack moss round it till the pot is full, and then choose out some neat, fresh, green moss, and cover the entire surface of both pots with it, close up to the neck of the plant. It will then stand in a bed of moss, and will look very beautiful and fresh. Give a gentle watering, and cover the whole with a hand-light, high enough to allow space for atmospheric air. The best house to grow it in is a low stove, within eighteen inches of the glass. The temperature to be kept up is 70° to 75° in summer, and 55° to 60° in winter.

General Management: Water.—Apply this element regularly, but do not keep the soil too wet, as if it was a puddle. When the plant is growing freely, sprinkle it over head twice a week. The moss will grow rapidly, and to keep it short, clip it close to the compost once a fortnight. In winter give less water, and cease the sprinkling entirely.

Air.—If the hand-light has a moveable top, and every hand-light ought to have it so, then prop it up about half-an-inch every morning in summer, and less in winter. If the hand-light is entire, then prop it up at the bottom, but rather wider, to let in an equal proportion of fresh air.

I prefer a hand-light to a bell-glass, because there is less drip and more air; but I saw lately, in the stove belonging to Mr. W. Rayner, a zealous amateur in plant-culture, in Uxbridge, a plan of using a bell-glass, that is, I think, a great improvement. He chooses a bell-

glass a little larger than the pot containing his plant or cuttings, and by a simple contrivance places the bell-glass so that no drip can possibly run into the soil or sand; that simple thing is nothing more than three or four slips of zinc, four or five inches long. One end is thrust into the soil, close to the inside of the pot; the other end is bent down outside, close to the pot also, then turned up again; it then forms a kind of a hook, on which the bell-glass rests. It will easily be seen that the condensed water runs down the bell-glass sides, and escapes down the outer side of the pot, which, if placed otherwise, would run into the soil; besides, there is an opening all round, which gives air to the plant inside at all times. This simple contrivance is, I think, a good one, and worthy of general adoption, especially to newly-potted plants requiring only partial closeness.

Propagation.—The *Cephalotus* may be propagated both by seeds and division. *Seeds* are sometimes perfected, and should be sown directly they are ripe. Sow them in very sandy peat, under a bell-glass in heat, and as soon as they are large enough to handle, prick them out singly, in the tiniest pots, place them under a hand-glass in heat, and repot as they advance in growth, till they are large enough to be treated as a full-grown plant.

By Division.—When a plant is large enough it sends forth from its base young suckers. As soon as these have roots, divide them off from the parent plant, pot them in small pots, and place them under a hand-light, kept close, and shaded for a fortnight; they will then have made some fresh roots, and will bear a small addition of fresh air. Very little water must be given whilst in this weak state, but as they advance in growth more stimulants, in the shape of water, air, and light, should be allowed. The time for this division is about the end of April, and by the middle of June they may have a repotting, and be treated afterwards in the same way as the established plants. T. APPLEBY.

HARDY FERNS.

(Continued from page 222.)

CETERACH.

CETERACH OFFICINARUM (*Officinal*, used formerly in medicine).—The name is *Cheterak* in Persia. A Fern not uncommon in Britain. I found it growing on the north side of old walls near Tetbury, in Gloucestershire, in great abundance. This shows how it ought to be cultivated, namely, on shady rocks.

Fronds simple, but so deeply cut as almost to be pinnate; lance-shaped, about six inches long, densely covered with long, loose scales. Seed-vessels placed between the veins on the upper part of the frond. The veins are beautifully placed on the leaves like net-work. A very beautiful Fern, easily cultivated, and increased by dividing the tufted plants.

LOMARIA.

Most of the species of this genus of Ferns were formerly arranged under that of *Blechnum*, a genus that had become quite unwieldy. The Lomarias are easily distinguished by their contracted fertile fronds, of which our *L. spicant* is a familiar example. None of the *Blechnums*, as now arranged, are hardy.

LOMARIA ALPINUM (*Alpine*).—This is a pretty dwarf Fern, from the hills of Van Dieman's Land. It is generally kept in a frame; but it will live through the winter, if covered in severe frost with dry fern-leaves or a hand-glass. I have had it live through severe weather close to a wall without any protection. Seed-bearing fronds contracted, and distantly pinnate, growing six inches high. Barren fronds lance-shaped, erect,

four inches high, pinnated, and bright green; pinnæ oblong, and round at the top, with the edges quite entire. Increased readily by dividing the creeping rhizoma.

L. SPICANT (Spiked).—This a common Fern throughout Great Britain. I have found it very finely grown at the foot of rocks in Derbyshire; hence, in culture it should be planted in a moist place. Fertile, or seed-bearing fronds, a foot high, distantly pinnate, contracted; pinnæ curved. Barren fronds lance-shaped, a foot long, spreading, deeply cut into lance-shaped segments. Increases freely by the side underground shoots from the tufted rhizoma or rootstock.

ONOCLEA.

This is a genus of Ferns from North America. There is only one recorded species, but I possess another, named *O. obtusiloba*, which I obtained from a friend, under that name. It has not yet produced its fertile fronds, so I cannot determine whether it will prove a genuine species; certainly, it is a variety. The name (*Onoclea*) is derived from *onos*, a kind of vessel, and *kleis*, to shut or close; the seed-vessels being shut up or covered by the lobes of the pinnæ on the fertile fronds.

ONOCLEA SENSIBILIS (Sensitive).—A most beautiful hardy Fern, from North America. I have seen, in the garden of the Warden, at Winchester College, large tufts, a yard across, of this beautiful Fern. My good friend, Mr. Weaver, has the charge of that garden, and grows foreign hardy Ferns very successfully, cultivating them in light soil, composed of peat and leaf-mould.

O. sensibilis has two kinds of fronds, fertile and barren. The fertile spring up amongst the other, growing from one to two feet high, contracted very much, and bipinnated in opposite pairs; the leaves on the pinnæ curling over the seed-cases. Barren fronds triangular, very broad, of a most beautiful delicate green, pinnated with entire margins. This is a most elegant Fern, but will not bear handling; hence its specific name. It grows well in a wood where the trees do not stand too thick; the rhizomas running freely amongst the decaying leaves. I have seen examples in such situations at Mrs. Bosanquet's, Broxbournebury, and at Sir Oswald Moseley's, Rolleston Hall, Derbyshire. Increases rapidly by dividing the creeping rhizoma.

POLYPODIUM.

A large genus, distributed throughout every quarter of the world. A considerable number are natives of Britain, and some of North America, all of which are hardy and worthy of cultivation. This was formerly a very numerous tribe, but is now reduced to moderate dimensions. The true Polypods are known by their circular naked seed-vessels, and by their simple-forked or pinnate veins.

P. VULGARE (Common).—This is the Fern we see so common on hedge banks, fallen trees, and low walls near to woods. The fructification is very conspicuous and beautiful. The one called *P. v. Cambricum*, or Welsh Polypody, is the most distinct. In the garden at Winchester, above referred to, I noticed a variety with the leaves very deeply and sharply cut into segments. I have ventured to name this *P. vulgare dentata*. It is true, the Welsh Polypody has its leaves deeply cut, but they are very irregularly so, and are frequently curled both upwards and backwards, circumstances that never occur, that I am aware of, in the *P. v. dentata*. Mr. Weaver could give no account where it came from, but stated that it was very constant in its varied character. In a garden near Barnet (Wrotham Park), Mr. Thomson, the excellent gardener there, showed me a lot of common Ferns growing in a raised bed, and, to my great surprise, I observed a few fronds of the *P. vulgare* that were dentated, like the one at Winchester. I drew Mr. Thomson's attention to it, and he promised to separate that

part, to try if the dentation would be permanent. Another variety is in cultivation, named *P. v. bifida* (twice-cut), that is, with the apex of each leaf divided into two parts, all the other parts remaining the same as the common one. All these are readily increased by dividing the creeping rhizoma. T. APPLEBY.

POTATO PLANTING.

It will be remembered, that no sooner had the Potato disease shown a tendency to remain with us, many well-meaning persons rushed forward, each advocating the extensive culture of some favourite plant, which he regarded as a worthy substitute for the useful one whose service threatened to be fast approaching an end. In this way old plants, whose uses and culture we were all familiar with, were recommended to be more extensively grown, while new ones, whose very names were a stumbling-block to the most important of all Potato consumers, "the poor cottagers," were also urged on us as deserving substitutes for the fast decaying tuber. Simultaneously with these were many suggestions as to the cause of the disease; and some few insisted on having discovered a cure for it; while some went to the expense and trouble of importing and cultivating afresh the wild plant from which our garden varieties of the Potato were originally obtained, with, however, no better success than the poor cottager, who was content to plant in spring such Potatoes as disease and other circumstances had still left him, with, perhaps, the consolation of afterwards knowing that his crop was not any worse diseased than his employer's, who had been to the expense of sending either to the antipodes, or some place half-way thither, for his seed, as well as taking every pains which science could suggest to ensure a healthy produce.

Coupled with all this, were the innumerable experiments which were made by parties, all anxious to ascertain if the disease was under control, and the many means they had of publishing their experiments led to the general adoption, by those whose means allowed them an opportunity, to try all; but, somehow, the result was anything but favourable; for the Potato, in most instances, obstinately refused to maintain a healthy growth in unfavourable seasons; and though every season, lately, has not been uniformly unfavourable all over the country, yet each one has been so in certain localities; so that Potatoes have never been so plentiful as of old; although it must be admitted that the disease has been, on the whole, less fatal than on the first year of its appearance, as well as on some succeeding ones; as, for instance, that of 1849, which was certainly the worst, with the exception of 1846. But my purpose is more with the planting of Potatoes for the use of the current year than chronicling the events of the past; so we will pass on to that duty without further comment.

Amongst the many remedies which the inventive genius of the last few years has presented us with, as bearing on the Potato disease, none seems to have answered better than the one urged on by the Editor of THE COTTAGE GARDENER, some years ago, which was to plant only the "early kinds;" and to do that either in the autumn, or very early in spring. In addition to this, various other "improvements" or "amendments" have, from time to time, been tried or suggested. The "autumn-planting," in some cases, being abandoned; but "the early spring-planting" seems to be all but universally adhered to; even those who do not adopt it, only excusing themselves on the plea of being unable to do so from circumstances; and as its merits are so generally admitted, we may take for granted that "early spring-planting" may be set down as one of the fixed laws bearing on the subject of Potato-culture, and

proceed with some other points on which, perhaps, there may be a difference of opinion.

Stiff, clayey lands, which, in times long since gone by, used to produce excellent crops of Potatoes in dry summers, rarely now furnish a good crop; and not unfrequently it is a total failure. This is to be accounted for by such lands being generally later than dry, sound lands, and the crop being overtaken by disease before it be far enough advanced in growth to resist it with effect, the result is often little short of total annihilation. This state of things can only be remedied by effectually draining such lands, and adopting a better mode of tillage, whereby its tenacious qualities are altered. This, of course, is the work of some years, and other crops will be more beneficial on such lands than Potatoes. Where Potatoes must be grown on such land, a liberal application of mortar-rubbish, or lime, in addition to other loosening substances, must be well worked into the ground prior to the Potatoes being planted; but it must be kept in mind that these substances do not unite with the soil when they are first applied, but some time necessarily elapses ere the union is completed. Yet, they exercise a useful influence at once; because, in the subsequent diggings or ploughings they get into the ground, and getting between portions of the stiff, clayey matter, prevent these uniting again into one impenetrable mass, thereby permitting the entrance of the air; and as lime and chalk, and their kindred substance, mortar-rubbish, seem all agreeable compounds to the Potato, their presence is beneficial rather than otherwise to the crop. Even stones of a soft or sandstone kind have been found beneficial fertilizers to a stiff soil; and though I cannot say that I have ever seen it tried particularly for Potatoes, I have seen stone-shatter, from a sandstone quarry, applied at the rate of upwards of a hundred tons an acre, on stiff land, with the best effect to corn and other crops. Stiff lands are also benefited by judiciously digging or tilling the ground at the right season; but as this subject has been dwelt upon in a former article, I will not repeat it here, but will merely say, that the most important fertilizer or assistant to such lands is a fine, dry spring, when the tilling and planting is supposed to be going on; while the worst evil that can befall such a soil is a spring of the contrary description, followed by a dull, cold, and perhaps wet summer. However, under the most favourable circumstances, Potatoes do not thrive so well in a clayey soil as in a dry, loamy one. I do not mean a poor, hungry gravel or sand, where each succeeding crop is merely the creature of the moment, and success or failure due to the natural and artificial means adopted at the time; but one of those deep, rich soils, which, having sufficient moisture without tenacity, are capable of supporting a healthy vegetation through a dry season as well as a wet one, without those artificial means being used at the moment, which cannot well be done on a large scale.

Perhaps, one of the most effectual means that can be adopted to guard against disease in this useful tuber is to plant the soundest sets that can be had on the best ground, in order that a vigorous and early growth may take place, instead of a late and weak one; the early being less likely to be attacked than the latter, and if it be attacked, its constitutional energy will enable it, to a great extent, to resist his attack.

There are many modes of preparing the seed Potatoes, but I confess having but little faith in any one of them. A writer in a contemporary journal, and, in fact, backed by the editor of it, strongly recommended the sets to be half roasted before planting. This fiery ordeal seemed an extreme one, and, certainly, liable to end, in some cases, in total failure; and the results of the past year has not, seemingly, confirmed its utility. Washing the sets with a strong solution of lime, is, certainly, a more rational

one; but I could never see how the washing of the seed in January or February could affect the crop in July or August, because, at that time they are drawing their support from the medium in which they are growing, and not from the parent set; and we all know, that late in summer is the time when the disease makes itself manifest, not slowly and imperceptibly, but all at once. Nevertheless, the amateur who has taste for experiments may try different rows operated upon in different ways, and the result will tell for itself.

Allowing the seed Potatoes to lie on the ground some time in Autumn, so as to get "greened," has also been found successful, and we have more faith in that being so, than in the efficacy of any "mysterious wash" being of service some six months after it has been used.

To sum up the whole, the most certain way of combating the evil is to get the ground into the best order, and, as early in the season as possible, to plant good Potatoes without cutting them, giving them plenty of room, and as soon as they are up, to commence a course of tillage between, whereby a strong, vigorous, and healthy growth is encouraged; and if an adverse season facilitate disease, the chances are, those who have been best done by will be in the best condition to resist it, and will suffer much less than those which have been treated in an opposite way.

Attention ought also to be paid to the kind of Potato planted; but as each district has its own favourite, little can be said on that score, except again enforcing the propriety of only planting *early kinds*. If any really new varieties, obtained directly from the seed, can be had, a few of them are certainly worthy of attention.

J. ROBSON.

ALLOTMENT FARMING.—FEBRUARY.

THERE is no system more generally appreciated by those whom it concerns than the allotment system. It is now abundantly proved to be the fertile parent of many advantages to every portion of the community. The labourer finds in his allotment the means of turning his spare hours to advantage, which would otherwise, most probably, be spent in the beerhouse, to be succeeded by domestic broils and misery. He finds it the means of eking out his scanty wages, and in a system of labour, which, from its very nature, being in the association of his wife and children, under his own direction and management, and for his own immediate and personal benefit, becomes a pleasure instead of a toil. It quickens his intelligence, in making agricultural experiments upon a small and useful scale. It gives him an interest in the soil; it attaches him to his home; it makes him feel interested in all the risks of the public safety, and makes him the friend of public peace and order. It makes the cottage a peaceful and happy home, and the allotment a healthy training-school for the children.

At many of the Horticultural Shows, where cottagers compete for prizes, I have seen as fine fruit and vegetables grown by cottagers as by gentlemen's gardeners. If you ask each of them how he managed to grow them to such a size, and in such perfection, every one of them will tell you that he is indebted to the *cesspool* for his success.

The exhalations produced from stagnant waters are very unhealthy; as the agues and fevers so prevalent in badly-drained districts generally prove. Vegetable and animal matter left in the open air to decompose is the great cause of producing an unhealthy atmosphere; and at the same time that the slovenly cottager is allowing this matter to breed disease, contagion, and malaria in his neighbourhood, for the destruction of himself, his family, and his neighbours, he is allowing the best part of the manure—the ammonia and carbonic acid gas—to pass into the atmosphere. It would be desirable for every landlord to have a receptacle built for receiving all the soapuds and other refuse from the cottage; the receptacle to be four or five feet square, and three or four feet deep, bricked and cemented at the bottom and sides, with a lid on hinges to cover over, and a drain to

run into it to carry off all refuse from the house; all animal and vegetable matter to be there deposited. By strewing a little gypsum, that is, the Sulphate of Lime, and ashes on it, the ammonia, the best part of the manure, that is now given off to vitiate the air, would be fixed. If what is allowed to spread disease and contagion around us was fixed, there would be no complaint from cottagers that they had not manure to enrich their allotments; as it is a fact that the urine and other matters voided by each individual daily, would produce one pound of corn, or a pound of any other vegetable for the sustenance of man. There is such a beautiful provision and harmony in all the works of Nature, that there is no waste, and not one atom more or less in existence than there was at the creation of the world.

As dung-heaps are frequently made on the allotments, exposed to the atmosphere, washed by the rains, and bleached by the sun, it is advisable to mix a little lime with the dung to destroy the eggs of insects and grubs, and covered with any light soil at hand, by that means the volatile and nutritious gases are retained in the heap until its services are required; when they are dug into the ground the rains make soluble the manures, and they all contribute materially to supply corn and green crops with the constituents necessary for their perfect development.

The allotment system that is now so generally being adopted opens up a wide field for investigation. We have yet much to learn of the nature of soils, of manures, of the particular improvements that particular soils require, of the proper application of manures, of the best system of culture and rotation of crops, and of the structure and habits of plants; all these things are only known by scientific inquiry and examination.

The first best step to be taken in the successful cultivation of fruits and vegetables is to have the ground *well drained*. When the subsoil is retentive of water, drains should be made to carry the superabundance off, as every soil retentive of water is less productive on account of its coldness and exclusion of the atmosphere, than the soil through which the rain can filter and carry down its fertilizing properties. When water is in excess in the soil, the atmosphere is excluded, and as no decomposition can take place without air, therefore the organic and inorganic substances contained in the soil are useless. Admit air by drainage, and the water, with a certain degree of heat, in its descent through the soil, will render soluble the substances to be imbibed by the roots of plants. On clay, or other stiff land not drained, the bad effects are visible, both in dry and wet weather—at one time saturated like puddle, at another, baked like a brick. By proper drainage such defects in the soil are obviated; then the rain in its descent carries down ammonia, carbonic acid gas, and the other enriching elements of the atmosphere, and assists to make soluble the organic and inorganic substances of the soil, which can be received only in that state by the roots of plants. When the soil is well drained, it is then that its temperature is increased by the heated atmosphere, and a want of rain is less felt on account of the facility with which the roots, in well-drained soils, can receive moisture by capillary attraction from below.

If stiff ground had been *ridged up* in the autumn, the beneficial effects after the frosts will be very visible when the time arrives for digging it down and cropping it; the frost promotes the dividing and decomposition of the mineral constituents. In consequence of the great expansion that takes place in freezing, the particles of the soil are much more completely separated than could be done by the most efficient system of ordinary tillage. And when the ice melts, the soil is left in an open, porous condition, freely admitting air and moisture, and, consequently, deriving from them somewhat of the advantages at all times derived from open soils.

LUCERNE is a most useful crop for the cottager's cow; it requires a good and deep soil, the ground to be well dug two spits deep, and the manure deposited at one spit deep; the seed to be sown about the middle of this month, in drills, nine inches apart. The quantity of seed is one ounce-and-a-half to the perch. The plants to be kept free from weeds. In favourable seasons, it admits of four cuttings in the summer, and will continue productive for ten or twelve years.

RED CLOVER, for shallow or boggy land, will afford a large

quantity of green food as well as hay; the ground to be well and deeply dug, and the seed sown any favourable time from this month to April. It is generally sown at the same time with Oats, and covered about one inch deep; an ounce-and-a-half of seed is sufficient for a perch of ground; the soil to be covered with a coat of manure in spring and autumn. Two or three cuttings will be had from it during the season; but it should never be given to the cow until it has been cut for some hours.

BEANS and CABBAGES TOGETHER.—The Broad Beans are dibbled in during this month in double lines, four inches apart, and with an interval of three feet to the next row. The Cabbages are the *Thousand-headed* sort, raised the previous autumn, pricked out in March (in any spare corner of the garden), and finally planted in their places between the rows in the field, in May or June, in showery weather. When the Beans are over in August, the space between the rows of Cabbages is dug, and the soil drawn up to their stems, when they grow rapidly, and yield a great bulk of green food towards Christmas, and if the leaves are then pulled and given to the cow, or pigs, a second sprouting takes place at the end of March or beginning of April.

THE AUVERGNE PEA, sown now, produces, in favourable weather, an abundant succession of gatherings; height, five feet.

THOMPSON'S PEA is a prolific sort; height only eighteen inches, and bears the whole crop at once.

Allotment farming is now becoming of paramount importance in the United Kingdom. The many publications attest the increasing interest that is felt by all parties, and the necessity there is of disseminating practical knowledge on the subject. How that, in my humble opinion, would be best done, is for every gentleman, on whose estate a village school is established, to grant the schoolmaster the privilege of renting from four, or five acres of land attached to the school, at the usual rent charged for land in the neighbourhood. The boys being employed two or three hours each day in the cultivation of the land, would give them healthful exercise, and a good practical knowledge of farming and gardening. The management to be in the hands of a schoolmaster competent to direct his pupils in the most modern and improved methods, and to be able to explain on correct principles the theory of each operation, and confirm it on the minds of the pupils by practical proofs. He should allot the plot into regular portions, that the proper rotation of cropping might be adopted.—W. KEANE.

THE APIARIAN'S CALENDAR.—FEBRUARY.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

FREEDING.—Much care and attention must be given to stocks that are at all weak, in supplying them with barley-sugar. The very unusual mildness of the weather has kept them constantly in an active state, and, consequently, caused a greater consumption of food than is usual at this time of year. So completely has the last few days (the first week of January) aroused them, that the queens of strong stocks have, I expect, commenced laying eggs, for I observed some of my bees in warm, sunny corners, and on the roof of my greenhouse, taking water to carry to their hives, which is a pretty sure sign that breeding has commenced.

BARLEY-SUGAR.—Next to honey in the combs, barley-sugar will be found the best food at this time of year, as well as the least trouble. It should be given, if possible, at the top of the hives.

BIRDS.—The Titmice have been more determined for the last few weeks than I ever remember; they visit my hives in flocks of a dozen or two at a time, and, in spite of all that I can do, destroy a great many bees. What they take at the mouth of the hives is comparatively trifling to those they capture on the wing. The destruction of these birds as much as possible, a good supply of barley-sugar to weak hives, and a clean, dry floor-board to all, will, I trust, carry them safely through the winter.

PRESERVING A SMALL QUANTITY OF ICE.

IN answer to your request, I beg to lay before you the plan I adopted for the keeping of a small quantity of ice, from winter till the middle of August; being perfectly satisfied that if a large quantity were stored in the same way it may be kept till ice again makes its appearance on our lakes and ponds the following winter. For my part, I see no reason why, if properly secured, it should not last or keep as long as if in an icehouse.

The method adopted was as follows:—The hands employed were limited; I had, therefore, to work accordingly. I got fifteen cart loads to the spot selected for *stacking*. This was one day's work, the ice being left in large pieces as we got it from the pond. The spot selected was a little above the surrounding level, in order to insure perfect drainage. We next proceeded to breaking, which was *well done*, one man continually throwing it on the stack, whilst the others broke it; and, notwithstanding what Mr. Robson says to the contrary, we succeeded in forming a good roof; of course, some would fall down in the act of breaking, but this was broken and thrown up after. The ice on the outside was then beaten very small and firm. It was then covered with straw, and allowed to remain till a frost set in, which happened a night or two after. Between 10 and 11 p.m. I went to the stack and uncovered it. I then took a large watering pot of boiling water and spread it equally over the ice; then left it till next day, and then had it covered with a coating of straw about six inches thick. Then round the base I proceeded to dig a trench about three feet wide, for a two-fold purpose, the soil being thrown on the covered ice, and the trench to serve to carry away or drain the stack more perfectly. The whole was then thatched neatly.

Some of your clever and intelligent writers and readers may not agree with me in the application of *hot water*. I applied it upon recommendation, although no reason was assigned why it should be of any utility. If it be of use, I take it to be this,—the outside being beaten fine, the hot water then poured on melts a small part, which with itself is soon cooled to the freezing point, and forms one mass; this coating then *fixes* the air contained in the stack, and prevents communication with the external, consequently, I think, nearly all the melting or wasting takes place at the bottom. Those who condemn the *theory* may admit the *practice*. I do not know but that cold water would do as well, but, certainly, think one of the two desirable.—J. R.

PEACH-BLOSSOM DESTROYED BY ANTS.

WE have, at present, one of our Peach-houses in full bloom; but ants (*Formice*) are making a sad havoc among them. I was not at all surprised at seeing them very busy over the trees at this stage, as it is not uncommon, particularly if the green-fly has made its appearance. What first took my attention was, that all under the trellis was covered with petals, stamens, &c. This led me to a minute examination of the trees, and to my great mortification, I found that very few blossoms had escaped them; of some, the stamens were eaten or cut out; in others, all the parts were taken away; and in other instances, the anthers only were cut off, which the ants carried away in the direction of where they seemed to have their nests.

On examining one of the damaged flowers with a magnifying glass, I could plainly see the skin of the embryo destroyed and eaten, in appearance like what I have seen wood-lice eat out of apples and such-like. For my own part, I never knew ants harm the flowers like this. Still, it may not be of rare occurrence.

I may state, that I have been very successful in trapping them. I was going to try honey, as recommended in *The Cottage Gardeners' Dictionary*, but having none at command, I substituted *molasses*, and the effect was all I could desire. I caught and killed thousands. I coated the inside of several flower-pots with *molasses*, and placed them in proximity with their nests. I also put some all round the stems of the trees, and the same on the bearers of the trellis. In a very short time after there were evident signs of confusion among those still on the trees. I gave the trellis a smart shake, which had the effect of increasing

their alarm, for the rest of the time I watched they showed no inclination to resume their former depredation. In six hours after there were none to be seen on the trees, excepting those that got *fast* in the *molasses* put round the stem. I think many of them must have made their exit by the top, or any other way as best they could, without coming in contact with the *molasses*.

I may add, that there were no green-flies in the house; for it had been well fumigated a few days previously to the blossoms expanding, and we keep no plants in the house.

I should feel obliged for a hint about this case in your "Notice to Correspondents," if it is only a common misfortune; if not, it may interest some others.—A. McLEOD, *Wentworth Gardens, near Rotherham*.

[Have any of our readers met with an instance similar to this? We have always considered ants beneficial rather than injurious, except in making free with ripe fruit.]

GROWING CUCUMBERS IN A PINERY.

SEEING so much on Cucumber-growing in your numbers, I beg to state what I am doing at the present time, in a stove about thirty feet long, heated by "Pannell's Apparatus," in a very simple way, with plain pipes for both top and bottom-heat. I cut fourteen Cucumbers and three Pine-apples for Christmas, and I have cut five-and-a-half dozen of Cucumbers, and ten Black Jamaica Pine-apples, this month (January), and there are fifty more Cucumbers now coming on. They are called the *Sion House*; but many of them were eighteen inches long, and fine, handsome fruit.

They are trained up to a trellis, along at the back of the Pines. The temperature of the house has been kept from 65° to 70°, and the bottom-heat about 80°. I have, also, a half-dozen Cucumber plants in my succession Pine pit, and they are trained up in the same way, along the back of the Pines, to a trellis which comes partly over the walk. The heat here has been only 60° at night, and the Cucumber plants look very clean and healthy, and are now full of fruit, but they do not come on so fast as those in the stove, and the fruit are much shorter, and more the colour of the *Sion House*, though the plants were all from the same seed.

I find, from what I have seen around this neighbourhood, that success in growing winter Cucumbers depends more on a pure, wholesome atmosphere, than a high temperature, which only exhausts the plants.—HENRY BARNES, *Park Hall, Chesterfield*.

QUERIES AND ANSWERS.

GARDENING.

THE OLDEST VARIETY OF THE APPLE.

"Which is the oldest variety of the Apple known to be existing in England?—HEREFORD."

[This is not a question so easy to be answered as at first sight it appears; for who can prove that the Pearmain and Golden Pippins of our days are the same varieties, as the Pearmain mentioned in the time of Edward the 1., and the Pippins grown by the gardener of Henry the VIII? All that with certainty can be said, is that we have well-known Apples bearing the same names. Mr. Hogg differs from this our opinion, and thus speaks of *The Winter Pearmain*, in his "British Pomology."

"This is, I believe, the oldest existing English apple on record. It is noticed as being cultivated in Norfolk, as early as the year 1200,—what evidence against Mr. Knight's theory! In Blomefield's History of Norfolk, there is mention of a tenure in that county by petty serjeantry, and the payment of two hundred pearmain, and four hogsheds of eider of pearmain into the Exchequer, at the feast of St. Michael, yearly. It is the original of all the Pearmain, a name now applied to a great variety of apples. Much doubt has existed as to the origin of this word, and in a communication to the 'Gardener's Chronicle' for

1848, I there stated what I conceived to be its meaning. The early forms in which it was written, will be seen from the synonyms, they were *Pearemaine* and *Peare-maine*. In some early historical works of the same period, I have seen *Charlemagne* written as *Charlemaine*, the last portion of the word having the same termination as *Pearemaine*. Now, *Charlomagne* being derived from *Carolus magnus* there is every probability that *Pearemaine* is derived from *Pyrus magnus*. The signification therefore of *Pearemain* is the *Great Pear Apple*, in allusion, no doubt to the varieties known by that name bearing a resemblance to the form of a pear."

Another tenure similar to that alluded to in the above quotation is thus particularised in Blount's *Ancient Tenures*. "Walter de Hevene held the manor of Ronham, in the county of Norfolk, *in capite* of our Lord the King, by serjancy of two measures (*duarum mutarum*) of wine (*vin*) made of *Permain*."]

THE CHINESE YAM (*Dioscorea Battata*).

"I see, in a recent number of *THE COTTAGE GARDENER*, that the new Chinese Potato is *not* *Dioscorea Japonica*. I also see, in the "North British Agriculturist," an advertisement—"The New Chinese Potato (*Dioscorea Japonica*). Is this a hoax, like the 'Pernea Perennial Turnip,' last year, in the same paper, for which we paid 3s. 6d. per packet? Many people would give ten shillings for four roots, as an experiment, if they thought it was not a hoax.—C. G. GREY, Tipperary."

[The Chinese Yam is no hoax. Its true name is the *Dioscorea Battata*, and it is merely a mistake to call it by a wrong specific name. Whoever of the dealers in it first advertises it in our columns will find it remunerative. We have reason to believe that some one on the other side of the channel will do so, and at a cheaper rate.]

DISASTERS FROM USING GAS-TAR IN A STOVE.

"It would have been well for me (and, perhaps, others) if Mr. Beaton had preached from his 'text,' on tar and worms a few weeks sooner, as it would have prevented me from using the former article, which I have now done, to my sorrow. We have here four pits heated by one boiler, with top and bottom-heat, which we use for the growth of Cucumbers and Melons, French Beans, Vines in pots, Strawberries, and flowers. In fact, we have a variety of uses for these pits, and have hitherto succeeded pretty well. It is our practice to thoroughly clean out the pits, which we do by mixing a good quantity of sulphur in lime-wash for the walls, and oil and black for the hot-water pipes before starting, which we do about the first of January. Having read in *THE COTTAGE GARDENER*, October 10th, in answer to a correspondent, 'Slater,' that 'the ammoniacal and other fumes from gas-tar, are beneficial to plants, but destructive to insects;' and, as you have told us that the answers you give to one correspondent, you intend for the whole of your readers, I thought gas-tar would be cheaper and better than oil for the pipes in the pits. Knowing, also, that the blacksmiths in this neighbourhood use it for painting their iron work when hot, I set to work, and painted the pipes with gas-tar, having kept up a brisk fire the time I did them until they were quite dry. I then put in Cucumber seeds, Vines, and Strawberries, in one pit, and flowers in another. The Cucumbers came up well, and looked very fair until I potted them off, then the leaves curled up, and they went to nothing. Beans seem to stand it better, although they do not look anything like what we generally have them. I tremble for the Vines, they are now breaking; having started them, they must take their chance, I suppose. Flowers have suffered dreadfully; everything put in is more or less injured. A friend of mine, who knows how things ought to be, told me, a short time ago, I had the best Chinese Primulas he had seen. They are done for. Roses moved from a cool house where they had made some growth, so that you could see the flower-buds of some of them, are dried like tinder; in fact, everything is more or less injured. Mignonette, Verbenas, Honeysuckle, Coronilla full of flower-bud, have lost every leaf; Cinerarias and bulbs have not suffered so bad, but they curl a little at the edges of leaf. I think you will say this is a long catalogue of woes. Can you tell me what to do? for as

time goes on, I cannot see that the pits are freer from those fumes which you say are beneficial, but which have proved destructive to everything. Fortunately for me, my employer is a gentleman who pities me in my misfortune, although it must be very vexatious to him, as time, fuel, and plants, in a great measure, have been sacrificed. He has been good enough to take *THE COTTAGE GARDENER* for my instruction from its commencement, and I should be ungrateful if I did not acknowledge the good I have derived from it, never having been led wrong, except in this case. I have always put full confidence in what I read, as I have always considered that what you tell us is from practical experience, or from sources you can depend upon.

"We have a small house, with four Vines planted on a border. Inside in this little house we have various bedding plants. I gas-tarred the back-wall. Do you think that will be injurious when we get more power of sun? We have a flue in it, and I have been obliged to have a small fire, just to keep out frost, and I find from the little warmth I have given, the plants show that there is something there they do not like. I hope you will caution every one who reads *THE COTTAGE GARDENER* not to use gas-tar in any glass structure; for I do not wish any one to have gas-tar in their nose night and day, as I have had lately. What good may result from its use in the open air, I will leave others who like to try. I have had enough of gas-tar for the present. I certainly have seen early vegetables, and trees, on tarred paling, quite equal to, or better, than on a wall.—P. W."

[We regret very much that our correspondent should have been led into error from anything that has appeared in our columns; but we plead "Not guilty" to the charge that any blame rests with us. We said, on the 10th of October, and we say again, that the ammoniacal exhalations from gas-tar are beneficial to plants, and destructive to insects; but we never recommended hot-water pipes to be painted with gas-tar, and plants to be subjected, within a confined space, to volumes of suffocating gas, driven off in mass from the tar when those pipes were heated! We once recommended salt as a manure for Potatoes, and a farmer told us he had destroyed all his crop by taking our advice. Upon inquiry, we found that he inserted the Potato-sets with a dibble, and put some salt into each hole, and thus well-pickled the sets! It is quite true we gave an extract from a French paper (*Galignani*), which said that gas-tar had been used beneficially in hot-houses, but we coupled it with no recommendation of our own; and when we give such extracts it is to elicit from some one a confirmation or refutation of the statements in such extracts. It obtained, in this very instance, a refutation from Mr. Beaton. Our experience extends no further than to gas-tar applied to a wall, against which fruit-trees were trained on an untarred trellis. It did not injure them, but certainly hastened the ripening of their fruit, by absorbing more heat from the sun's rays.]

MR. RIVERS' ORCHARD HOUSE.

"I have read once again, with some care, your quotations at page 128 of the present volume, from Mr. Rivers' 'Miniature Flower Garden.' The description of Mr. White's Peach trellis has started a difficulty which I will be glad if you or Mr. Rivers could solve for me. The trellis-house is only fourteen inches high at the front, and the lights are not removable. How can the gardener get under the tree to perform the necessary operations of tying, disbudbing, &c., leaving out of the account the fact that the trellis is fifteen inches from the glass? The sunken path in the centre will not give access to the under branches and shoots of the tree. I do not in the least doubt or question the accuracy of his statements given, but I should like to have my difficulties removed.—CLERICUS."

[When our friend "Clericus" recollects that the house is eight feet high at the back, and that it has a sunken path in the centre, say eighteen inches deep, he will find there will be sufficient access for the gardener, notwithstanding the front is only fourteen inches high. The trees are planted *inside* of the house, and not necessarily *close* to the front. We have seen such a house as is described at page 128, and have never seen any difficulty experienced in the management of the trees.]

PLANTING A RUSTIC BANK OF ROOTS, &c.

"I have made a bank about twenty feet in length, and four to five in height, formed of stumps of trees, intending it for Flowers and Ferns; it is partly under some high Scotch Firs. Will you kindly tell me what are the Flowers and Ferns most suitable for it?—Y. P. and H. N. E."

[If the high Scotch Firs shade the bank much, none of the best-flowering plants will succeed in that part of the block-bank, and that would be the best place for the Ferns. Where there is no shade, most of the popular herbaceous plants will do as well among the blocks as they would on a flat border; and some, as the different varieties of *Antirrhinum*s and *Dianthus*, will live longer, resist more frost there than they would on the level. All the *Potentilla*s, and all the *Campanula*s, are well suited for this bank; also most of the *Saxifrage*s, and all the *Delphinium*s or *Larkspurs*, *Iris*, *Sedums*, *Rockets*, *Lupines*, *Pentstemons*, *Lychnis*, *Linarias*, *Iberis*, all the hardy *Heaths*, particularly *Erica stricta* and herbacea, *Eschscholtzia*, *Chelone*, *Catananche*, and *Aquilegia*s. Along the top of the bank you ought to have some double-blossomed Gorse or Furze. It is just the place for half-a-dozen of them, also Evergreen *Berberis* (*B. aquifolia*). The strong-growing *Erica stricta* should be along about the middle of the border, and *Erica herbacea* along the bottom. Yours is a fine place for spring *Gentian* (*G. acaulis*), *Silene Schafra*, double Daisies, double and single best *Primulas*, with at least twenty kinds of *Dianthus*, which you can get from seeds. *Erinus Alpinus*, and most of these *Dianthus*es, with Moneywort, and *Aubretia purpurea* and *deltoides*, and every one of the *Saxifrage*s, will do on the blocks, if you can get little hollows for them to begin with. We once nailed pieces of such plants to blocks, such as yours, and our block-border was the safest place for all now plants for trial, as we never dug it, only stirred the surface once a year, and put on an inch or so of fresh soil. Avoid all strong creeping plants, especially such as creep much at the roots. *Crocuses*, and every one of the common hardy bulbs, will grow well on a block-bank. Little plants of five or six kinds of *Helianthemum*s, or Rock Roses, will do to stick, here and there, into the top or side of a block, and they will creep over it, and bloom to perfection. Blocks are better for them and for the finer kinds of Alpine *Dianthus* than rock-work. If you had asked what plants would not do for a block-bank, we should be fixed, and we should merely say, avoid marsh and water-plants. Every plant which is mentioned in THE COTTAGE GARDENER for rock-work will do equally well on a blockery, and some of them much better. All the bedding *Geranium*s, and *Verbenas*, and *Calceolaria*s, will do among blocks, if the soil is good, and if it is not good, no plants will live there for any length of time. Patches of annuals, here and there, look well among blocks, and all the odds and ends and remainders may be tried there, to see what they will come to. One thing you must always keep in mind, and that is, that mice are fond of root-work, and figure-4-trap, or a brick, with a Pea, and a string fastened to two sticks, are the best traps for them.]

VINERY, CUCUMBER AND MELON-HOUSE.

"I beg to submit the following plan of a lean-to greenhouse to grow Vines, Cucumbers, and Melons in, for your approval or modification.

"The aspect is due south; there is a high wall at the back and west, and a low one at the east end.

"The dimensions to be twenty-four feet from E. to W., and eleven feet from N. to S. The height to be as you advise. I intend to place the door at the front, three feet from the west end, and a three feet walk to go straight across to the main one, also three feet wide, so as to leave a bed at the west end, and along the back, three feet across, for the Vine roots (a large and vigorous *Black Hamburgh*, already growing), and one along the front, five feet wide, for Cucumbers, &c.

"I intend to heat it with a flue across the east end (the fire being in the S.E. corner, but fed from without), and two hot-water pipes along the bed at the front (or in lieu of pipes, do you think a bark-bed would answer better?).

"Also, will glass, fifteen ounces per foot, and cut twelve inches wide, be strong enough for the roof? and instead of sashes, will not bars of deal, one inch wide and two inches

deep, supported at each end and in the middle, suffice? with three ventilators one foot square at the top, and two swing sashes at the front.

"If you approve of the hot-water pipes, will not three-inch draining-tiles well luted with clay, and a metallic pipe to turn through the fire, the other ends entering an open tank, answer as well as if the pipes were all metal?—W. W."

[See an article on greenhouses by Mr. Fish. Your contemplated house is not a greenhouse, but a hothouse, or forcing-house. We think we understand your contemplated plan. A raised border of three feet for Vines, at back; a walk of three feet, and then a raised bed in front of five feet, for Cucumbers, Melons, &c. We would advise a foot or eighteen inches more for the Vines, to be curtailed from the Cucumbers.

Now, the form of your house must depend upon the fact, whether you wish things very early or not. We presume you can go as high as you like against the back-wall, say from fifteen to seventeen feet, then, if your front height was from five to six feet, you would have a good house for general purposes. But, suppose you wanted early Cucumbers and early Grapes, then I should recommend your back wall to be fifteen feet, and your front wall to be three feet, with lower ventilation in the wall, or some of the glass moveable. In the latter case, I would not take the rafter or sash-bar close to the wall at top to make a very acute angle there, but fix them to a ridge-board, about one foot from the wall. This would make a great difference in the matter of room at the top. By making several strokes upon a piece of paper, you will see the different appearance of such houses at once. Now to your questions.

We have no faith in a bark bed in such a position, because, without your bed be on arches, and the tan often renewed, you could not get bottom-heat nor yet top-heat; a flue carried right round underneath the beds would be better. We have no faith in earthenware pipes so treated. What, if one cracked, or burst, or got broken; what would you do with Cucumbers and Melons, and those roots above it? We have as little faith in a metal-pipe stuck in the fire and its ends entering an open tank, because the force in the tank would keep up no great circulation afterwards. To do the thing effectually, you would require a boiler similar to the one mentioned to-day, and you would require, at the very least, two flow four-inch pipes, and two return, if early work was wanted, and one return, in moderate circumstances. We would take these flow-pipes below the bed for the Cucumbers, and return them in the house where most convenient, or under the bed intended for the early Vines. For either of these purposes, the pipes should be enclosed next the path by a wall; a rough grouted chamber should enclose them; slides should be in the wall, to let out heat to the atmosphere as wanted. Above the grouting should be drainage, and holes left in the wall to let out extra moisture. The wall by the side of the path should be as high as would be necessary for soil. When a moist heat was wanted, means should be taken, by means of a pipe, to have moisture into the rough brickbat-chamber in which the pipes are placed.

See what is said on rafters and sash-bars, in the article referred to. Your's will not be strong enough for a flat roof. For a steep one, with a width of twelve inches apart, I should think that one-and-a-half and two-and-a-half inches would do, with an iron-rod going along the centre of the house, each rafter sash-bar fastened to it, and, perhaps, three or four pillars, equally divided from the two ends.

Your ventilation at the top will not be sufficient, nor hardly half enough in summer. Mr. Fish has alluded to opening sashes in front. With such a house, three feet in front, and some fifteen or sixteen feet at back, and so heated, you will grow good Grapes against the back wall and the highest part of the roof, and Cucumbers and Melons on the lowest part. We have found that the latter did well even in such steep-roofed house in summer, as they then received less direct sunshine than houses with flat roofs. You must have an eye to red spider, or woe to the Vines. Had we the managing of such a house, we should divide the front and back bed into as many boxes, or little pits, as there were lights, and then the changing or removing of one plant would not affect the others.]

MELONS FROM CUTTINGS.—AZALEA FORCING.— BLANCHED TURNIP-TOPS.

"I see Mr. London recommends *Cuttings of Melons* in preference to seeds. I had bad luck last year with Melons; I cannot raise more than 70° bottom-heat. I should be glad of your opinion, and I shall follow your advice on these points. I have three large plants of *Azalea indica alba* well set with buds; I put them under glass before frost came on at Christmas, in an early vinery, started at 50° by day, 45° at night. The buds swelled, and I thought I should have a few early flowers, but I am disappointed. They have been regularly watered, and not over watered. My opinion is, that the atmosphere has been too close and damp, which I have kept for the sake of the Vines; at the same time, some of the newer sorts, such as *Glory of Sunninghill*, have flowered well under the same treatment.

"Allow me to thank Mr. Fish for the hint in growing the *Swedish Turnip-tops*. I grow them to look as nice as Sea-kale. He deserves a medal for it.—P.P."

[Seventy degrees is not enough for bottom-heat for *Melons*, it should be nearer 80°. We do not know the means you use. If pipes, covering the surface of the soil with tiles and moss will often raise it materially; do not begin too early. We do not dislike *cuttings* for Melons; but we never found the plants better than plants from seeds, and, of course, you must begin with them first.

We find there is great difference with *Azaleas*, as to their endurance of moist heat when opening their buds. Plenty of air seems the only remedy. We have also noticed that plants that have got very dry several times in autumn, though they did not shed their buds, never opened them kindly, forced or unforced.

Many people, especially farmers, who could command a little heat, and any old border box to throw over the Turnips, have had fine dishes this winter of what they call "Turnet Sea-kale."]

PREVENTING DRIPPING FROM A GLASS ROOF.

"You will greatly oblige, if you would give a hint of the most effectual way of making the glass of a new conservatory tight, the house being very broad, and a lean-to roof, the angle is only 25°, and although the glazier has repeatedly been painting and working at it, it continues to drip *greatly*, and the house is not a year old. All the sashes, &c., are of wood; and the glass is thirty by eleven inches.—SUBSCRIBER."

[We should like more particulars. Does the drip come from the rafters? If so, is there a good groove, one quarter-of-an-inch deep below the sashes, so as to take moisture away? The work must be very badly done if the moisture finds its way in through the putty at the side of the sash-bar. What size are your laps; and are they glazed? Narrow laps are all the rage, and do well in houses with steep roofs; but in flatter ones, the water is first drawn in by capillary attraction, and drips inside; and if not glazed between the laps, and the dirt has not filled the space, rains will be driven through them. Are you sure the dripping comes from the outside? because, in such cold weather as we have had lately, all the the vapour in the house would be condensed against the glass; and then, should it get a little warmer, it would descend like a shower-bath. The remedy for this would be more fire-heat, and air at the highest point of the roof. A narrow tin, copper, or galvanized iron groove, fixed upon the base of each sash-bar, would also prevent the drip, though costing something. Let us know if any of these meet your case.]

GROSS PEACH-TREE SHOOTS.—PLECTRANTHUS FAILING.

"The Peach-trees here made some uncommonly strong shoots last year; perhaps three or four feet long, and some more. Now every one of them pushed all their lateral shoots the same year. I judge it is from the roots of the trees being so deep, so that the warmth of the sun does not reach the roots before very late, and sets the tree to work again. What I want to know is, should I take out all those strong shoots, or leave them on, and cut off the young laterals, leaving one or two at a regular distance?

"Secondly, I have had some very nice plants of the species *Plectranthus concolor picta*, and every one of them

died off last month. I have had them in a small house, kept up from 55° to 60°. Why was this?—J. R."

[Your strong shoots of Peach-trees should have been stopped when they showed such rampant growth, and then you might have chosen a couple with more likelihood of bearing. We would not cut them out now, but cut them back and reserve some side-shoots from them this year, that is, if they are well-ripened so far back. If the whole tree showed such a tendency, a little root-pruning in October would have done them good; and even now, as being better late than never. If any of the laterals show bloom-buds, retain what you want; if not, either cut them away, or to the last bud. If too deep, the roots should be raised within fifteen to eighteen inches of the surface.

Your *Plectranthus* we suppose to be the same with *Coleus Bloomei*, the treatment of which was lately given. We have kept some in the temperature you mention; but they are not over grand to look at, though safe. 60° should be the minimum, apparently.]

FRUIT-TREES IN A MIXED GARDEN.

"I have a kitchen garden 354 feet long by 306 wide. There is a fruit-tree border, twelve feet wide, all round the garden; next comes a gravel-walk, eight feet wide. Down the centre of the garden there is a gravel walk, nine feet wide, in the middle of which another walk, eight feet wide, crosses it at right angles. On each side of the walk, down the centre of the garden, I have a flower-border, five feet wide. I wish to plant Apples and Pears (espaliers) all round the walk sides; and what I want to know is, what distance you would recommend me to plant them apart, and the distance from the gravel walks. The garden is divided into four square plots. Would you recommend me to plant standard Apples on the squares; if so, at what distance apart? I do not wish to have the garden too much crowded with trees; but I think a few standards on the squares would do little harm. Of course there will be Gooseberries, Currants, &c., on the squares, which will take up a good bit of ground.—Jno. McDONALD, Wicklow."

[We are no great admirers of espalier fruit-trees. Even when very well pruned and trained they never bear so well as dwarf standards. We should plant the latter, and if carefully trained in a cup-form they do not overshadow the borders so much as espaliers. We should plant the same form of fruit-trees on the quarters, and only on their north sides, so that they would not overshadow much the quarters. Both on the borders and quarters plant them fourteen feet apart.]

MANAGEMENT OF A PINERY AND VINERY COMBINED.—MUSCAT GRAPES.—DRESSING FOR FRUIT-TREES.

"I have about thirty good, strong Pine-Apple plants, and I wish to have the fruit ready to cut on the first week of August; at what time should they show fruit? and what will be the best means to make them show at the time required. My pit is in a large Vinery, and I must start the Vines (the Vines are *Black Hambros*.) in the first week in March; the Vines are old, and I think they will not bear much heat, for I am afraid the roots are not very good. I shifted the Pines into their fruiting-pots early in September; the plants are in good health and well rooted. Secondly, I planted a house of *Muscat* Vines, late in 1851, in a new border, twenty-two inches deep, of an excellent compost of good, turfy loam, lime-rubbish, and bone-dust: they grow very strong, and last year showed two and three bunches from every eye; they set well, and all went on well for a time; after the berries had got as large as Horse-beans, about one-third of them stopped then; the rest of them swelled away well, and were some fine fruit; but the bunches, of course, looked bad on account of the other berries not swelling. The wood that they made is but weak this year in comparison to what it was before. I am afraid the roots must have got through the border. The border is well-drained, but the bottom is not concreted. The Vines were not over-cropped; I only left eight bunches on each Vine. If the roots are through the border, had I better raise them? and if so, when? I want to start them in March, and I must have a crop from them this

year, if possible. Thirdly, what is the best *dressing for out-door fruit-trees*, such as Apples, Pears, Plums, &c.? I am always plagued with the blight. Three-parts of the bloom never opens at all. There is always a small grub in the inside of the bloom, and it eats the inside of it; and last year I was sadly plagued with the caterpillar; what fruit was set, half of it was eaten away, in spite of all I could do. My garden is in a very low situation, completely surrounded by high hills on every side, except the east, and a large river close to it; it is both cold and damp, and I have great difficulty in getting the wood ripe; and late fruit, both Pears and Plums, some seasons will not ripen at all. Is there any fear of keeping Pines too dry? and would you remove the suckers from the plants when they shew fruit?—T. NORTH."

[To fruit in August, the *Pines* should start and grow on slowly from the beginning of April. Do not let them get too cool nor too dry now, if in the old Vinery, or the young fruit is apt to suffer.

The *Muscat Vines* had quite enough of bunches if the bunches were very large. Very likely the unequal size of the berries, a very common occurrence, was owing to the fecundation being less perfect. They are always the better of a little assistance in this matter. It is almost too late to raise roots now; give them a little good top-dressing, and if they do not succeed according to your expectations next season, then raise the roots in the beginning of November, and a good coating on the border would cause them to make roots all the winter.

Soot, sulphur, tobacco-juice, and clay, are as good a general wash as any for general purposes. We have found clay and sulphur and soot very effectual. Any oily matter reduced is the best for the *American blight*. Turpentine daubed into the knots kills it completely, but it must be used carefully. Station-planting must be very suitable for your position. There will, probably, be much published by us before long to meet your case.]

IMPROVING THE STAPLE OF CLAY SOIL.

"I should be glad to have the opinion of one of your talented contributors on the best mode of applying lime, bog, and sea-sand (this latter from Morecombe Bay); as mixtures to assist in giving fertility to soil of a strong, red, loamy clay. First, as to the bog or peat moss, whether to select the upper stratum of red peat, or the lower one of black; how to apply it, whether by spreading it to exposure to frost, &c., or mixing it with sand or manure, to ferment for two or more months? Whether lime is beneficial to mix with the compost? The sand, whether to lay it on the soil at once, to mix it, or add lime to it? Then, in what proportions each, say of bog, sand, and lime? all equally easy to be procured.—O. B."

[This is one of those many enquiries which reach us impossible to be specifically answered, owing to the absence of the necessary information to guide us.

No universal standard or recipe can be given for the formation of a fertile soil, but a soil, the constituents of which approach in their proportions to those of the following, cannot be unproductive in any climate. It is a rich alluvial soil, which Mr. Sinclair, in his invaluable *Hortus Gramineus Woburnensis*, gives as being the most fertile for the grasses:—

"Fine sand, 115; aluminous stones, 70; carbonate of lime, 23; decomposing animal and vegetable matter, 34; silica, 100; alumina, 28; oxide of iron, 13; sulphate of lime, 2; soluble, vegetable, and saline matter, 7; loss, 8; total 400."

We may add, that, to constitute a fertile soil eminently such, much of its earthy particles must be in a minute state of division. In the above analysis, 185 parts only were separable by sifting through a fine sieve, 215 parts were impalpable; whereas poorer soils will often have 300 parts coarse matter to every 100 of finely pulverized constituents.

Now, beyond the fact that there is too much clay (alumina) in our correspondent's soil, we know nothing relative to its excess or deficiency of constituents. There may be plenty of lime in it, there may be not enough, and there may be an excess of iron. If he sent us an analysis of it we could tell him more precisely what to do. As it is, we can only re-

commend twenty tons of the black peat to be mixed with five tons of lime, and then mixed, incorporated thoroughly, with eighty tons of the sand. These quantities are for one acre; they must be increased or diminished in proportion to the space of ground wished to have improved in its staple. We should spread the mixture at once upon the land, and have it then thrown up into ridges.]

BARLEY STRAW *versus* OAT STRAW FOR COWS.

"Would you answer 'J. B. H.' if Barley straw gives more milk than Oat straw? The opinion here is that Oat straw dries cows, which I cannot believe. If any does, I should say that of Barley.—O'BRYNDULAS, *Abergyle*."

[Very little is the nourishment contained in any kind of straw, unless it be cut while rather green, and is used whilst new. Its chief use is to give bulk to a cow's food, and when she is fed upon Cabbages or Turnips, Straw or Hay, or both, are absolutely necessary to enable them to ruminate, or "chew the cud." We believe that neither Oat straw nor Barley straw has a tendency to dry a cow given in small quantities. If largely given, they have such tendency, because they equally are deficient in milk-generating constituents. We believe Oat, Wheat, and Barley straw, to be so nearly identical, as to show that not one of them can be superior to the other as cow food. Wheat straw, when burnt, leaves about 7 per cent. of ashes, Oat straw 5 per cent., and Barley straw 4½ per cent. What their other constituents are, may be judged from the following tables:—

	WHEAT STRAW.	OAT STRAW.
Carbon	48,48	49,93
Hydrogen	5,41	5,32
Oxygen	38,79	39,28
Azote	0,35	0,38
Ashes	6,97	5,09
	100,00	100,00

What the ashes are composed of is told in the following statement by M. Sprengel:—

	WHEAT STRAW.	BARLEY STRAW.	OAT STRAW.	RYE STRAW.
Potash	,020	,180	,870	,032
Soda	,029	,048	,002	,011
Lime	,240	,554	,152	,178
Magnesia	,032	,076	,022	,012
Alumina	,090	,146	,006	} ,025
Oxide of iron	trace	,014	,002	
Oxide of Manganese ..	..	,020	,002	..
Silica	2,870	3,856	4,588	2,297
Sulphuric Acid	,037	,118	,079	,170
Phosphoric Acid ..	,170	,160	,012	,051
Chlorine	,030	,070	,005	,017

POULTRY.

THE ROOSTING-PLACE FOR FOWLS.

"Being a novice in poultry-management, and having lately bought about thirty fowls of different sorts, which (to insure pure breeds) I wish to keep separate, will you kindly inform me,

"1st. If roosting-places may be safely made over a dung-pit, where horse-litter alone is thrown, notwithstanding the steam and heat arising from the manure; having a straw roof?

"2ndly. Whether a hen-house entirely of brickwork, arched over and covered with garden-soil on the top, is objectionable? There are apertures over the door in front towards the south to admit air and egress to the meadow

below. The hen-house is $9\frac{1}{2}$ feet long by 5 feet wide and $6\frac{1}{2}$ feet high. How many fowls might I safely allow to roost there at night, having free liberty by day? I have formed my garden (being on the slope of a steep hill) into terraces, and under one of these terraces the above hen-house is placed.

"3rdly. Whether it is advantageous, and promotes egg-laying, to keep the fowls during winter in a stable, cow-house, or conservatory, or other warm-covered building? and what temperature is best?

"I should add, that my fowls (chiefly Silver-pencilled Hamburgs, Game, and Dorkings), although nearly thirty in number, have laid no eggs since October, except one which I lately put into a warm conservatory. They have free liberty over a meadow of two acres, and abundance of good food. The hens of neighbours in the town are laying, though pent up in dustholes and within narrow limits. I attribute my failure to the cold and damp weather and clayey soil, and the absence of any straw or litter.

"I have lately placed five hens under the stage of a small conservatory, the temperature of which averages 55° , being heated by a flue with coke. Am I wrong in this?—J. C."

[1. The ammonia arising from a pit where horse-dung alone is deposited would be injurious to fowls roosting over it. The evil results of the ammonia in an ill-ventilated stable are sufficiently well known, especially with respect to the eyes of horses.

2. The character of the soil would be an important consideration in determining this inquiry. If dry and porous, so as to secure absence from damp in the hen-house, and suitable apertures were left for air above, *i.e.*, just below the roof, such an arrangement would, doubtless, answer its purpose. From twelve to fifteen full-grown fowls would be well accommodated within the dimensions stated.

3. Artificial warmth for poultry is a subject on which great care should be exercised. It is an admitted fact, that their plumage is never in higher condition than when roosting in laurels, low fir-trees, and other evergreens; and condition in this respect is evidently the most effective protection against weather. Even where extra warmth is desired for early-hatched chicken, a greenhouse or conservatory without fire answers better than where the flues are heated. As regards eggs, however, we should have little doubt that the laying properties would be promoted, or at least accelerated, by warmth during weather of more than ordinary severity; but this is a totally different condition from their actual health, and is, moreover, in analogy to what we notice in over-fed young birds unnaturally forced, which, after attaining great weight at a very early age, rapidly fall off. The instances of fowls' productiveness and condition when allowed to roost in a cottage, or cow-house, is another matter; in such cases, the natural warmth of the animals below, and the circumstance of the birds roosting above, with a free passage of air in a building of considerable extent, removes this case from either of those mentioned in your communication, *viz.*, "confinement over a pile of horse-dung," or "the heat obtained by the combustion of fuel." In a cottage, moreover, the number kept is comparatively small, and their usual position, at least in Ireland, where such inmates are not objected to, is in the large chimney-side, with a consequent free circulation of air, and among the heap of turf-ashes, which would contribute so greatly to their well-doing. In all arrangements for housing poultry, security from actual frost, and shelter from cutting winds and damp, are to be aimed at rather than actual warmth; although, as before said, the production of eggs might be increased for a time under the latter course.

A damp meadow and clayey soil are obstacles to success in poultry-keeping only to be obviated by great attention to the fowls, and the provision of dry yards of chalk, gravel, or some equally porous material, with good under-drainage. The varieties you name are not early layers; but still, at the present date, whether old birds or moderately-forward chickens of last year, they should certainly be contributing their quota to the egg-basket.

The policy of placing your hens in a conservatory heated with coke at an average of 55° , may be answered by a reference to the former portion of this reply.

You appear to have several varieties kept separate. Has each their separate run? Or do you allow it them only on

alternate days? Remember that the breeds you speak of, "Hamburgs," "Dorkings," and "Game," are those never to be kept, if profit is expected, within a run of only moderate extent. Without full liberty they never really thrive.]

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

W. SMITH, York, is thanked for his flattering communication. It is not suitable for publication.

AUTUMN-PLANTED POTATOES (*A Subscriber*).—We, cultivating a light, thoroughly-drained soil, always plant in autumn, seven inches deep and do not earth the plants up more than enough to cover such tubers as may be formed near the surface. Some good authorities prefer early spring-planting; but we persevere in autumn-planting, our crop having never suffered much from the disease since we did so. Volumes were published on the "Gooseberry," "Apple," and "Vine."

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RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1855, with Newspaper Stamp to go Free by Post, is now published.

The proprietors of this well-known Publication have endeavoured, in the present edition, to render it even more complete than the last; and have again obtained the valuable assistance of Mr. Robert Errington, Gardener to Sir P. Egerton, Oulton Park, who is acknowledged to be one of the best practical writers on Horticulture of the day.

It will contain a very valuable descriptive list of KITCHEN GARDEN SEEDS, with prices affixed to every article, and in addition to the descriptions, there will be short and concise cultural remarks for every kind of Vegetable, pointing out the best varieties for early, medium, and general crops.

The List of FLOWER SEEDS has been much improved, and contains descriptions of all the leading sorts, with directions for sowing seeds, and other useful practical remarks; and in this department Mr. Errington has written expressly for the work an original article on ANNUAL AND OTHER FLOWER SEEDS, which will be read with much interest.

The CALENDAR OF OPERATIONS for the whole of the year has also been revised, and will be found even more useful than the one in the last edition.

There will be a good Garden ALMANACK as usual, and the detailed quantities of seeds contained in their useful COLLECTIONS OF SEEDS are given in full.

A valuable report of the experiments in their TRIAL GROUNDS is also given, and descriptions of the NEWLY INVENTED CLOCHE, or Hand Glass, and of the new CHINESE POTATO (DIOSCOREA BATATAS). The following original articles have also been written expressly by Mr. Errington—on VEGETABLE FORCING, LIGHT AND AIR, LIQUID MANURE, and ROTATION OF CROPS. And in addition to the above, the proprietors have been favoured with an original paper by J. B. Lawes, Esq., of Rothamstead Park:—“ON THE ARTIFICIAL MANURES MOST SUITABLE FOR THE GROWTH OF BARLEY.”

At the request of several correspondents the Publishers have printed the present Edition the size of the “Gardeners' Chronicle,” so that those who wish it can bind it with the present volume of that valuable Paper. It contains 32 folio Pages, “Chronicle” size.

Copies can be procured, price 6d each, or free to purchasers of seeds; and can be obtained through the medium of any bookseller in the United Kingdom, from the LONDON PUBLISHING OFFICE, 294, STRAND; Or from the Proprietors, WILLIAM E. RENDLE & Co, Seed Merchants, Plymouth.

DICKSON'S EARLY FAVOURITE PEA (NEW).

—FRANCIS AND ARTHUR DICKSON AND SONS, Seed Merchants, &c., Chester, have much satisfaction in introducing the above new Pea, which they believe they are perfectly justified in saying is the best and most prolific Early Pea in cultivation.

It has been tried side by side with all the best early and second early Peas of the day, and has been pronounced by many eminent gardeners who saw it under the circumstances to be much superior to any variety of its season hitherto introduced.

It comes in about a week later than the “Early Emperor” (sown at the same time), grows about four feet high, and produces a wonderful profusion of pods, which contains on an average ten Peas of excellent quality and flavour. It has been grown the last two seasons in the Gardens of the Horticultural Society, and Mr. Thompson, in reporting upon it, writes as follows:—

“Horticultural Society's Gardens, Dec. 20th, 1853.

“In reply to your inquiry respecting DICKSON'S EARLY FAVOURITE PEA, I beg to state that I consider it a new and very desirable variety. It is very prolific in pods, and also as regards the number of Peas in the pods, and the quality is excellent. It most resembles the ‘Auvergne,’ but is earlier than that excellent sort, and the pod is not so much booked.

R. THOMPSON.”

“Horticultural Society's Gardens, June 28th, 1854.

“I beg to hand you a copy of the memorandum which I made respecting your EARLY FAVOURITE PEA, amongst others, again this season. About four feet high, very prolific; pods long, roundish, slightly curved, containing on an average nine or ten Peas of excellent quality. Bears some resemblance to the ‘Auvergne,’ but differs in having straighter pods, and it is much earlier than the ‘Auvergne.’ An excellent prolific Early Pea.

R. THOMPSON.”

In July last a dish was sent to the Horticultural Society's Room, London, and Dr. Lindley reports upon it as follows [see *Gardeners' Chronicle* of July 29th, Notice to Correspondents, “F. & A. D. & Sons.”] “Having made the necessary inquiries, we are able to state that your ‘EARLY FAVOURITE PEA’ is a distinct and very useful variety among the class of second earlies to which it belongs. The pods are unusually full.”

Price 3s. 6d. per Quart; per Pint, 2s. Messrs. HURST AND M'MULLEN, Seedsman, &c., 6, Leadenhall Street, wholesale London Agents.—N.B. The Trade supplied on liberal terms.—106, Eastgate Street, Chester; (and 14, Corporation Street, Manchester). Jan. 20.

TWO NEW CUCUMBERS. — SIR COLIN

CAMPBELL and GENERAL CANROBERT.—For the full description of the above two unequalled Cucumbers, and the List of EDWARD TILEY'S Collection of Cucumbers and Melons—which have all been thoroughly proved—see Advertisement and Cut in *The Gardeners' Chronicle* of January 13, 1855.

Sir Colin Campbell, 3s 6d per packet. General Canrobert, 3s 6d ditto. A packet of either of the Melons mentioned in the former Advertisement will be given to the purchaser of the two above Cucumbers. A remittance in cash, or penny postage stamps, must accompany every order, and the whole or any part (as the case may be) will be immediately forwarded.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Somersetshire.

WEEKLY CALENDAR.

D M	D W	FEBRUARY 13—19, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
13	Tu	Parnus sericeus; pond bank.	30.611—30.502	38—17	E.	—	21 a 7	8 a 5	5 31	26	14 30	44
14	W	Valentine.	30.632—30.342	43—30	S.W.	06	19	10 6	6 30	27	14 28	45
15	Th	Hydrophilus caraboides.	29.980—29.926	44—29	N.E.	—	17	12 7	7 13	28	14 26	46
16	F	Bruchus ater; furze.	30.025—30.005	42—34	N.	—	15	14 sets.		29	14 22	47
17	S	Small Egger.	29.769—29.404	48—26	S.W.	—	13	15 6 a 13	1	1	14 19	48
18	Sun	SHROVE SUNDAY.	29.735—29.485	40—27	N.W.	06	11	17 7	43	2	14 14	49
19	M	Spring Usher.	29.959—29.894	40—25	N.	—	9	19 9	8	3	14 9	50

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 45.7°, and 31.7°, respectively. The greatest heat, 58°, occurred on the 13th, in 1831; and the lowest cold, 10°, on the 13th, in 1847. During the period 129 days were fine, and on 67 rain fell.

THE following are the concluding varieties of the Garden Pea, that we have now to notice.

KNIIGHT'S TALL GREEN MARROW,
AND
KNIGHT'S DWARF GREEN
MARROW.

THE plant of the *Tall* variety is a robust grower, attaining the height of six feet, sometimes with a simple, and frequently with a branching stem. It possesses the same property as the *Tall White*, of throwing out lateral shoots, when the tops are pinched off. The pods are three-inches-and-three-quarters to four inches long, somewhat curved, and contain from seven to eight peas in each. The *Dwarf* variety does not grow above two-feet-and-a-half high, and is much more branching in its habit than the other, but the pods are not so large. The ripe seed, in both cases, is green and wrinkled.

The seed was sown on the 4th of April, and the plants bloomed on the 2nd of July. On the 30th of July the pods were ready to gather.

HAY'S MAMMOTH.

SYNONYMES. — *Ward's Incomparable*, *Green's Superb Tall Marrow*, *Will Watch*, *Waite's Will Watch*.

THE multiplicity of names which a variety obtains is a pretty sure indication of its excellence. Nobody thinks it worth his while to append his name to, or take possession of, another man's property, unless it is worth having, and unless some advantage can accrue to him thereby; and thus it is from such a cause that so many synonymes originate, and so much confusion arises. We have known this variety of Pea for the last sixteen years, and we cannot tell how long it had existed before that; but we know that it was first obtained by Mr. Anderson, who was a partner in the firm

of Hay, Anderson, and Sangster, of Newington Butts, from a small market-gardener in Battersea Fields, and

hence it was called *Hay's Mammoth*. Some ten years ago, it appeared in the new character of *Ward's Incomparable*, when it was sold at I don't know how much a quart; and again, three years ago, it was introduced with the bold name of *Will Watch*, and by way of keeping up the delusion of it being a new variety, was charged double or three times the price it could be bought at under its old name. Verily, this last character is a happy adaptation, since we learn from tradition that "*Will Watch was a bold smuggler.*"

THE plant is very strong and vigorous, from six to seven feet high, and when thinly planted produces three or four lateral branches, which are as long and productive as the main stem. The plants produce from twelve to twenty-four pods on each, accordingly as they are thickly or thinly planted; and they continue to grow and bloom and pod till late in the season. Pods generally in pairs, but sometimes single, three-inches-

and-three-quarters to four-inches-and-a-quarter long, somewhat curved, smooth, and of a bright green colour, containing, on an average, seven very large Peas, which are over half-an-inch long, nine-twentieth's wide, and eight-twentieths thick. Ripe seed white and wrinkled.

THE seed was sown on the 4th of April, and the plants bloomed on the 1st of July; on the 8th the slats appeared; and on the 2nd of August the pods were ready to gather.

THIS is a most abundant bearer, and the latest garden Pea in cultivation. We have seen it, in mild winters, supplying an excellent crop at Christmas. It is also of a delicious flavour, having all the richness and sweetness of the best wrinkled varieties.

Here endeth the paper on the GARDEN PEA, which, as far as was possible, embraces every variety which was in cultivation in the summer of 1853. There are some additions which we have not hitherto had an opportunity of testing, but hope to do so; when, we have no doubt, we shall meet with what we sometimes do in other vocations of life,—some old friends with new faces. Such undertakings as these are not without the sacrifice of much time, and the accompaniment of considerable trouble; but it is a labour of love; and if life and health be preserved to us, we intend to pursue the same course with other garden Vegetables as that which we have now finished with the GARDEN PEA.—R. H.

AMONG the specimens commonly exhibited at Poultry-shows in the class “for any other distinct variety,” there are several to which allusion has been already made in our remarks on the characteristic points of the various breeds. Thus we have regarded the *Andalusian* and *White Spanish* under the general head of “Spanish Fowls,” where we certainly think they should take their place. The *Cuckoo fowl*, nine times out of ten, is simply a Cuckoo Dorking; and where this plumage is borne by a Malay, a Game, or a Shanghai bird, those several races should number among them the birds of this characteristic feather. *Brahma Pootras* are to be treated in the same manner, and to give them their utmost due, they receive full encouragement when marshalled in a class for “Grey Shanghaes.” *Rangoons*, again, are merely “pile Malays;” and the white, black, mottled, and yellow Polish, that are sometimes collected at the fag end of the Catalogue, should ever be enlisted in a “Miscellaneous Polish class.” *Black Hamburgs* should go with that family; and the *Indian* with the *English Game*; where, however, they would frequently be disqualified, from the evident intermixture of Malay blood.

Of those that remain for consideration, the birds for which the claim of specific distinction may be most confidently asserted, are principally the *Turkey fowls*, the *Rumpless*, and the *Frizzled*.

The first of these, or, at least, birds of kindred race, that have been for the last two or three years pressed upon public notice as *Ptarmigans*, have recently been shown in infinitely better form under the title of *Serai-Tüök*, or *Fowls of the Sultan*. Not that these birds are in all respects identical; but they so far resemble each other, as to enable us to come to the conclusion that the last importations from Constantinople present us with all the features of excellence that would be desired in birds of that character. The so-called “Ptarmigans,” an appellation, by the way, almost as objectionable as the “pheasant fowls” of former days, had sadly degenerated during the twenty or more years that had passed since their introduction into this country; for their pedigree seems now to be clearly established, and the term *Turkey fowls* may with all propriety be applied to the breed.

The *Serai-Tüök* approach the size of the White

Polish fowl, with well-shaped globular top-knots, and beards, ample tails, booted, and five-toed. Where utility is regarded, in addition to appearance, we cannot but think that they must find many admirers, since, in this last respect, they may justly be considered one of the best additions that the “extra class” has for some time witnessed.

With the *Frizzled fowls*, the judge has mainly to regard characteristic plumage, of which each feather, the tail excepted, should wear the look of having been subjected to the hair-dresser's curling-irons turning their extremities backwards; the longer feathers of the tail, not admitting the same treatment, are ragged and dishevelled; colour is not obligatory.

In the *Rumpless*, the entire absence of the usual caudal appendage is presented to us, the saddle feathers falling over with unusual profuseness. Colour may here also be left an open question; and the arbitration will be guided by the condition, size, and general appearance of the specimens.

Among *Silk Fowls* there are several sub-varieties as to colour; but those that carry with them the best proof of a distinct breed are the White. In size they should range between the Bantam and the smaller fowls, such as the Game and Hamburgs; the web of each feather being disunited throughout from its point of junction with the shaft; legs slate-coloured, and feathered; face light blue, with the comb and wattles purple. In shape there is a decided approximation to the Shanghai form.

Some authorities would consider the necessary addenda to this class as deserving far more elaborate notice than we are by any means inclined to bestow upon them. The mere enumeration, on the other hand, will, perhaps, be deemed uncalled for. As the avowed object, however, of the class is to encourage new varieties, and submit them to a fair test, the following catalogue may be given as comprising the principal claimants for this distinction:—“Breda,” “Brazilian,” “Columbian,” “Russian,” “Bongal,” “Bruges,” “Normandy,” “Jerusalem,” “Cossack,” and “Varna.” Under each of these titles have birds been shown; and loudly expressed have often been the complaints of their owners that their merits have not been duly appreciated. We may venture, however, to state, that public opinion seems usually to have gone hand-in-hand with the judicial verdicts that have been pronounced on the various members of this division of our exhibitions. Several of these alleged breeds are evidently but cross-bred fowls; and others are as yet without any sufficient evidence of their being free from this stain; while of all, without exception, it may be fairly said, that they seem destitute of any recommendation which should raise them to a level with our present recognised breeds. On these grounds a detailed description of their several features would be waste of both time and space.

When complaints are made of prizes being withheld in this class, as was the case at the last Birmingham meeting, it would be well to remember the conditions on which premiums are offered by that society, as regards this particular portions of the show. In the

first place "*distinctness of breed*" must be satisfactorily established, since in the absence of this qualification no claim can be put forward. Again, prizes are offered, not "first," "second," and "third," for the whole class collectively, but "individually to each variety" irrespective of its competitors. The judges are directed to bestow these on "*deserving specimens*," and experience proves that they have over been desirous of affording encouragement in every instance wherever an opening for improvement seemed to have been gained. A "second" or "third" prize may be thus well bestowed on a member of this miscellaneous assemblage, where a "first," elevating the pen to a level with birds of acknowledged excellence and utility, would be a decided mal-appropriation of the funds entrusted to their disposal. Wide limits must be allowed the judges in decisions, and hitherto, for reasons already assigned, we apprehend that they have acted with discretion in limiting the honors of many doubtful claimants. Serious responsibility, indeed, attends the bestowal of high prizes on improved birds, for this guarantee of excellence becomes with many a passport to celebrity, and leads to large outlays being made for indifferent fowls, on the faith of such promotion, which they subsequently fail to justify.

The practical utilitarian view of the economy of the poultry-yard has become the leading principle by which the proceedings of our various societies are now regulated. Most cautiously, therefore, will every step be taken by their officials to guard against the currency of any false standard of merit, while, as at Birmingham, their resources are freely bestowed whenever encouragement may be justly called for. For our own part, we are now, as ever, most strenuous advocates for this "extra class," and always regret its absence as a blot on the schedule of any society; but nowhere, we still think, will the claims of the competing pens require more vigilant scrutiny; nowhere will the poultry judge be more constantly called upon to listen to the charge of undue severity.

Fears need not be entertained that by such a course discouragement will be thrown on the importer or inquirer after new varieties of fowls. Let them only produce a fowl that will stand the tests to which such birds are now submitted, and they need be under no anxiety as to its ultimate fate; while the very measures now complained against will be the sure means of at once disengaging it from a crowd of unworthy competitors, and thus guaranteeing its acceptance by a discerning public. How soon did the Shanghai gain this position! and proportionably rapid, we may be certain, will be the rise of any bird whose merits may rest on equal grounds.

VEGETABLE CROPPING—ROTATION.

Those who are concerned in what we term Kitchen Gardening will speedily be on the move, if not already in motion, and as a little discussion on this subject may prove of benefit to some, let us see how things stand. Of course, every one possessing the least pretensions to

direct gardening affairs has a rotation scheme for the whole summer and autumn; if not duly entered in a book, at least completely fixed in his mind. Our knowledge of the highest principles which should most seriously influence the scheme of rotation is yet of so limited a character, that we are, in the main, obliged to be led by past practice alone. We need more of the light of science in these matters; and many are the pioneers who are already constantly employed in thus clearing the way for another generation which shall look back on ourselves with pity and astonishment, just as they, in all probability, will be served by generations to come.

As has before been stated in these pages, almost every gardener has his own practice in this respect, and no wonder. The requirements of families so much differ as to carry a tendency to influence the most complete rotation scheme which could be framed. But another point also comes in as a bias: soils differ so much, not only in their constitution, but their aptitude or inaptitude as to certain crops, that it is almost impossible to have all our customary produce in perfection in any one garden. Thus we hear of a garden possessing what is termed capital soil, and yet cannot be made to produce a good Carrot; another, equally good, where all the Brocolis club; a third cannot be made to produce good Onions; and, to close the affair, but not for lack of cases, another, where a good crop of Peas is seldom met with. Now these are serious charges, to be sure; but as true as they are serious. And our friends, who do not pretend to much practical gardening, may very naturally ask of myself, or any other gardener of experience, how this happens; and what they must do. Well, to be candid, I, at this moment, have a strong desire to know why I cannot grow a Carrot fit to be called by that name in the gardens here; and yet our soil, a sandy loam, is by no means bad; and, moreover, a couple of feet or more in depth. I have tried all means within my reach; and during the twenty-seven years I have handled this soil, I cannot say that I have had half-a-dozen decent Carrot crops; such as grow in the fields are, of course, entirely out of the question. I have trenched deep; cropped with manures and without; used, as applications, charred rubbish in quantities; applied coatings of humus, or very old manurial residue, become almost a soil, and I know not what else; but without, in the main, any beneficial results worth recording.

What is commonly termed a dead soil is a puzzler; indeed, the term, worn-out, has surely been a somewhat infelicitous term to apply to soils rich in manurial residue. I fear, however, that we scarcely have a term in our poor language expressive of this state of things. It is commonly understood that each crop abstracts those principles from the soil essential to its well-being, and, consequently, leaves the soil in a less fit state for a succeeding crop of the same kind; but such cannot be the cause of the Carrot failure, inasmuch, as from their poverty of size and character they cannot be supposed to abstract any quality worthy of consideration. It is not, however, a mere matter of soil; for I am persuaded, that could the Carrot grub be kept at bay, Carrots would be one of our most thriving crops. The Carrot, therefore, in such cases, presents a difficulty in a garden rotation scheme, and the very best way for those who can so arrange it is to grow their stock on farming land, or to make up their mind to purchase the winter store annually in November; cultivating plenty of the *Early Horn* kind for summer use. It is a singular fact, that this kind generally succeeds when sown in the beginning of February, and protected like Radishes; even on the same spot which proves so fatal to the large kinds. I have little doubt that it is from the circumstance of their having attained a certain desirable

point in their growth before the period at which the fly annually appears, and which I suppose to be about the second week in June; the *Early Horns*, by this time, are almost ripe enough to secure a store. I mean, therefore, this spring, to sow my *Altringhams* in the second week of February, and I feel tolerably sanguine of success.

And now let us take another family, consisting of so many members as almost to puzzle the experienced in finding places for them—I mean the Brassicas, or, as the whole group is more popularly termed, “Cabbage-worts.” Here a difficulty occurs as to any very complete scheme of rotations. I have thought, and still must continue in the opinion, that, as to kitchen gardening, this one family must have more influence in biasing a rotation scheme than all the other culinary vegetables put together. It is of no use quoting the market-gardener, who is dunging and Coleworting all the year round. With all the sharp practice of this class of fast-men, they have not such a rapid recurrence of Cabbage-worts in their various grades and ages as a gentleman’s kitchen-gardener. And then, who manures like these worthies? The gardeners of the gentry have been oft accused of using immense quantities of dung; but their consumption is not worth naming as compared with the market-gardener. The gardeners of the gentry generally prefer rotten dung, and this preference is not so much a matter of choice, perhaps, as people may imagine. They have their old hotbed livings to work up; and, indeed, seeing the demands on ordinary gardeners as to things requiring warmth in one shape or other, where is the gardener who can afford to dig in raw manures like the commercial gardener? Now, I take it for granted, that herein lies part of the strength of the market-gardener: his soil, long departed from the primitive state of rest, or leys (as our farmers term old grass lands), requires a constant renewal of organic matter, and since rest is out the question, the long dung at once furnishes quality in the character of ammonia and other essences, and also a great body of organic matter; hence, the crop is what countrymen call a “hired one”—meaning, I suppose, prepayment. I do think, then, that the gardening basis of all rotation schemes must, in the main, be sought in the fact, that all these Cabbage-worts either must have change, or club, and other evils will, in all probability, follow.

I have before suggested, and must beg to repeat, that admitting the above principle, it becomes essential so to group cropping or rotation matters, as that not only a class of what I call “preparers” be kept constantly in view, but that subordinate crops, or, rather, things of second or third-rate importance, be made to subserve the future rotation. In all this I admit there is not much science; but there is, at least, common sense and expediency. Many an attempt has there been with high minds to banish this last awkward term from our Dictionaries, but all those who have hitherto attempted have somehow failed.

Let me here at once say frankly what I call “preparers.” To classify them, we may surely group all those things which, whether of primary or secondary importance, through the manurial processes requisite, together with the ameliorating character of cultural processes, are well known to leave the soil in better condition than when they took to it. As such, I may point to Celery, Endive, Leeks, Spinach, Lottuces, &c., as annual crops; these, if cultivated as they ought to be, of necessity improve the soil. And, as perennial crops, Raspberries, Strawberries, Asparagus, Sea-kale, Rhubarb, Artichokes, and all the bush fruits. This latter section is eminently qualified to produce a fitting condition of soil for the Cabbage-worts; and as such things must be broken up at times, it becomes a question how long to suffer them to remain on a given spot; certainly, not when in the

least degree unprofitable, seeing there are so many remunerating conditions waiting their removal.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY, 6TH FEBRUARY.

For the last three weeks we have had such wintry weather as I expected we should, but not the sunny days which we look for during hard frosts in snowy weather. No sun; no air for early forcing, any more than if we were in the middle of November fogs; and yet strong fires must be kept up almost day and night, not only to keep things as they were at the beginning of this hard weather, but to keep them from going back. The least experience of gardening and plants would teach that, of all others, this kind of weather is the worst for the gardener; and when I talked of going to London to see what the new regulations of the Horticultural Society could do, under this state of the weather, at such a season, people told me it would be daft to expect gardeners would run the risk of facing out, with their plants, in such weather; but I did not share in these forbodings. I had noticed all through life, that in gardening, at any rate, if a boy, or lad, or man, or master, put a bold face on, and took a step in the right way, be the weather or the times ever so bad, he was sure to succeed, so far, in gaining his point, whatever it might be.

For the first time this Society offered medals of such and such value, for such and such things, at their meetings in London, and the exhibitor knew well enough, before he left home, what would be his lot if he won in such and such classes. His British pride and love of emulation was thus aroused by a *certainly*, instead of how he used to feel on this subject, that is, to have no certainty of a prize, or award of any merit, except by the mere chance. To show that more than mere curiosity was at the bottom of this feeling of *certainly*, I may say, there were more nurserymen and good gardeners at this meeting than at any other in these rooms for the last thirty years; and there was a crowded meeting of the Fellows and their friends besides, all and every one declaring this to be the best show of plants and fruits he had ever seen in these rooms.

The large room was full in all parts, both sides of the wide passage leading to it were covered, and a room behind the library was also so full of the finest things of the kind in England, that the crowd could only pass in single file to view the different productions. And, would you believe it! there was not a man or woman there, “gentle or simple,” but one, who do not read *THE COTTAGE GARDENER*, and that one asked me if the *COTTAGER* had a good circulation! as he intended to advertise in it. Almost everybody in *our* world knows me; they all knew about my “Cavalry charges,” and about the winter setting in on the 15th of January; that told me what books they read. So you see, that if I do not just say how things really are, whether they are right or wrong, all my prophesying and soldiering would go for nothing.

The Messrs. Rollinson, of Tooting; Veitch, of Chelsea; Jackson, of Kingston; and Wooly, gardener to H. B. Ker, Esq., Swiss Cottage, Cheshunt, Herts, competed with ORCHIDS, such as you could not find their betters at a May show. “A splice of Chiswick,” as they all said. I think the Messrs. Rollinson had the first prize with *Angreecum eburneum*, a magnificent specimen, with several wreaths of large, white, ivory-like blossoms, with the accompaniments round the flower being not quite so white.

Phalenopsis amabilis, the Indian Moth Orchid, with two long spikes of flowers, dexterously turned into one

shoot-like wroath, of thirteen large white blooms. *Angræcum virens*, a smaller plant, with flowers of less marble-like purity and shining than those of *eburneum*; but in that way, a large plant, at rest, of *Lelia superbiens*, the very finest of all the Mexican Orchids. I unpacked the first plant of it that came to Europe in 1837, and supplied the dried specimens from which it was named, and described, but it is yet worth while for young gardeners to turn back and read the accounts about it. It blooms always in winter, and hoar frost has been seen not far from it, when in bloom, but on the very tree on which it grew, the glass showed only down to 36°, just four degrees above the freezing point on our scale. There was but one shoot in bloom on this plant from Tooting, and it had fifteen flowers of the most beautiful tints of purple, lilac, and blush. I never saw such a long shoot on *superbiens* before. I took it, at first, to be the Cow's Horn Orchid, from Honduras, *Schomburkia tibicinis*, which has the longest flower-shoot of all the Orchids we know. A large *Vanda suavis*, with several bloom-spikes, and *Leptotes bicolor*, just covering the whole pot and leaves with one mass of white flowers, not very large, individually, but you could not stick in a pin between them.

Mr. Veitch had *Barkeria Skinnerii*, which I saw in bloom and wrote about last December; the very same plants, for these Londoners cannot puzzle a prophet; so they have been in flower ever since, and will keep on a long while yet. They would have also done so in a sitting-room or warm bed-room just as well; they were now gathered into one very large pot, and had thirty-six flower-spikes on the mass. Every spike had on sixteen to thirty flowers of the richest crimson. Now, I take credit for such surprizingness, for I bothered them a long while with Mr Jackson's exhibition of it; but Mr. Jackson was "sold out" of them, and had to get a fresh lot imported, which will take a long while to beat the Londoners. *Oncidium Cavendishii*, a fine, large, yellow one, nearly as large as the *O. ampliatum major*, which is at all the shows, and much that way, except the leaves. A strong large plant of *Ansellia Africana* from "Clarence Cove," in Fernando Po, named after Mr. Ansell, the young botanist who accompanied the late unfortunate expedition in the Niger. Mr. Veitch had also a new kind of *Ansellia*, growing more like a strong *Bletia*, with rigid upright flower-shoots with brown and greenish flowers on the top, not near so good as *A. Africana*; then a large plant of a new white *Calanthe* from Java, one of the *Vestita* section, but with no coloured eye as in the first *Vestita*; a large *Angræcum eburneum*, and a *Calogyne cristata*, with nine or ten short racemes of large white flowers, which complete Mr. Veitch's collection; but he had some new kinds, a small plant of the white new *Calanthe*, a dull brown *Oncidium* in the way of *pubes*, the new *Ansellia* just mentioned, and a new *Eulophia*, with pale brown flowers on long upright stalks, and with no leaves.

Mr. Woolly had a nice little plant of the *Barkeria spectabilis*, with seven flowers; *Angræcum virens*; a *Barkeria Skinnerii*, with five spikes of the most crimson blooms; a *Phalenopsis amabilis*; a large specimen of *Epidendrum rizophorum*; with numerous flowers of a yolk-of-egg-yellow; a *Cypripedium venustum*, and a *Zygopetalum Mackai*, with very large flowers.

Mr. Jackson, of Kingston, had a collection consisting of a good variety of *Lycaste Skinnerii*, of which there is no end to the varieties. *Odontoglossum membranaceum*, a rare kind, with large white flowers, which have a strong-marked purple eye, barred with brown; a *Barkeria Skinnerii grandiflora*, the deep crimson variety; a *Calanthe curculigoides*, with pale yellow flowers from the top part of the stalk, after the manner of a *Tritoma* scape; and an *Epidendrum aurantiacum*, with nearly the same yolk-of-egg-yellow as *Rizophorum*.

There were six collections of CHINESE PRIMULA, and six plants in each, chiefly of large, fringed, red and white ones; one collection had two reds, two whites, and two lavender-coloured blooms. The best grown lot had no name of exhibitor; by some mistake the address did not reach the office. I think Mr. Green, gardener to Sir. Ed. Antrobus, had the first prize for the six Primulas. Mr. Chilman, gardener to Mrs. Smith, Ashted House, Epsom, had a good collection of them also, and would have had the best prize, were it not that his plants had rather more heat, or more confinement, lately than is good for them. We were told that this Chinese Primula is all but hardy, if it is kept rather dry; that plants of it were now in fine bloom, at the Garden of the Society, between the glass-walls, where it was only two degrees warmer than the open air, so that they stood 16° or 17° of frost lately without any harm, but they were not in pots. Mr. McEwen, gardener to the Duke of Norfolk, had a double white one, all in very strong bloom and health. The society, also, had their six in good style. I forget the rest of the growers of these Primulas, but I must stop to say, that I never saw so many fine blooms of them near London, and that the best of these were but second-rate in size and in colours to what I have seen in Ipswich, with Mr. Latter, the best grower of them in England. I must also state thus publicly, that a Mr. Wild, at Ipswich, is advertising seeds of them, and is using my name for his authority for superior merit without my authority, for I have not the slightest idea of what he offers for sale. The fact is, if ever I see my name thus used again by any one, I shall write to the Lord Chancellor, to send the culprit to Balaklava at once, and there let him stick in the mud till I give him a helping hand.

There was one collection of six kinds of nice CINERARIAS, but not named sorts, from Mr. Todman, gardener to Mrs. Buckmaster, of Clapham Park, who had also several other good collections in the room, and whose name is new to me in the prize lists. He had six strong plants of *Laehenalia tricolor*, an old useful spring bulb; also three *Epaerises*, of which *Fairbairnii* is the best light flesh-coloured I have yet seen. The others were *Hyacintha flora*, paler than *Fairbairnii*; and another, a lighter still. Mr. Veitch had three kinds of *Epaerises*, fine, large plants: *Vivid*, the darkest crimson yet seen; *Candidissima*, the best white; and another, which I forget. Mr. Ingram, director of her Majesty's Gardens at Windsor, had three dwarf seedling *Epaerises* of his own raising.

Like his Royal mistress, Mr. Ingram is fond of cross seedlings, and is a very successful cross-breeder, and just that sort of man you would like to see going round the garden with a right royal party. He asked me "how long this weather was to last;" and told me his new crosses were, indeed, real dwarfs naturally, and not made so by stopping, as most of us thought at first sight. The best bright crimson one is called *Ingramii*, after himself. *Miniata rosea* is the next, and the name tells its story. The third is *Grandiflora nana*, but the crimson and the white are clearer than in the old *Grandiflora*. They were not higher than ten or twelve inches from the pot, but broad and hushy, like some close-growing Heaths; and I consider them a great acquisition, as most amateurs find it difficult to grow the old style of *Epaeris* into good close specimens. Mr. Veitch had five or six very large *Epaerises* out in the passage, as the room could not hold all.

There were three large CAMELIAS from Mr. Higgs, gardener to Mrs. Brown, Putney Heath: *Fimbriata*, the best white of all the Camellias; *Donkleari*, the boldest of the variegated class; and a blush-striped one, called *Punctata major*. Mr. Higgs had also, in a pot, the finest branch of flowers I have ever seen of any *Acacia*. It was from four to five feet high, branched

from the pot, the side-branches not more than six inches long, and ending with clusters of bloom as large, nearly, as the clusters of *Spiraea Lindleyana*, just like loose clusters of golden Grapes. This branch must have been cut from a large tree, to show the extraordinary richness and abundance of the flowers of this *Acacia*, *Dealbata*, when it comes to a large size; it is of the same section as *Affinis*, or "Green Wattle Mimosa," of the Australian settlers, but differs from it in having a white, powdery appearance all over the wood, and the leaf-stalks being *resupinate*, or turned upside-down, so that one might think that all the foliage of this *Acacia* was turned the wrong way.

Mr. Fleming sent a host of plants all the way from Trentham, just as if he were next door, beginning with three seedlings of *CACTUS (Epiphyllum) truncatus*; the one discovered in Brazil, by Gardiner, and which he called *Russelliana*, after his patron the late Duke of Bedford; *Violacea*, a richer tint, but in the way of *Russelliana*, and *elegans*, the best of the three, which I think I described three or four years back, as a new seedling, exhibited by Mr. Snow, gardener to Earl de Grey, who raised it. Also three finely-bloomed CHINESE AZALEAS, as good as at a May show; but he was beaten by three superior ones from our new friend, Mr. Todman; *Optima*, *Præstans*, and a half-double rose-coloured one. The Messrs. Rollinson sent three other kinds in the very height of bloom and beauty, *Purpurea rosea*, *elata*, a rose-colour, and *Semiduplex maculata*, a very good new one of the half-double rose. There were also, from Mr. Fleming, two plants of a variegated Chinese Azalea, with fine, marked, large flowers; a beautiful white seedling *Epacris*. If a gardener was pulled out of bed in the middle of a dream, and pushed in among these flowers, you might almost convince him that he was in that dream for the last three months, and that it was time for "bedding-out," instead of dreaming away his time for months. But are there no gardeners who have been dreaming these twenty years and more, and would not believe their own eyes if they were to see one-half of them?

Just follow me to the next table, and hear what Messrs. Henderson and Son, of the Wellington Nursery, had risked out in the midst of snow and slush, *without bell-glasses or any protection*, as you used to see in July; only seven kinds of ANÆTOCHILUS, to begin with; *Setaceus*, *Setaceus cordatus*, a darker kind than the first; *Setaceus Roxburghii*, greener-purple than ditto; *Setaceus intermedius*, the darkest purple of the set; *Lowii*, the largest and strongest; *Lobbii*, dark green; and *Zanthophyllus*, with a "milky way" in pure gold along the centre of each leaf; all as healthy as *Powder beaux*, as we used to call border Auriculas when I was a boy. Then, large pots and pans of Mr. Adkins' new seedling CYCLAMENS, and *Cyclamen coum*, all in bloom; and "fine-leaved plants," as *Paretha borbonica*, *Pandanus javanicus*, with fine, long, silvery leaves, as if the "Gardener's Garter" grass were turned into a slender Pine-Apple plant—a beauty. A variegated *Pine-Apple*; a Dumb Cane, *Dieffenbachia maculata*; two kinds of variegated *Hoyas*; and a *Calogyne cristata* Orchid, with five spikes of beautiful white bloom; altogether making a beautiful collection; and there was another collection to match it, from the same firm, on the next table, beginning with tree *Lycopods*, now called SELAGINELLA, by Spring; a name which is adopted by the best authorities in this country; *Selaginella Galeotiana*, *flexuosa*, *stolonifera robusta*, a dense sort; *stolonifera microphylla*, a very slender kind; *densum* and *ambrosium*, the prettiest of the lot, and if there is a link between Ferns and Lycopods, this is it. If you want to represent the two orders in your collection, you have only to buy *Selaginella ambrosium*. *Cupania filicifolia* will give the idea of a *Jacaranda*, with most delicate Fern leaves, spreading out like the growth of *Jacaranda mimosifolia*, *Dracena nobilis*, and *ma-*

culata, *Croton variegatum*, and *pictum*, with *Maranta lineata*, with the noble looks of *Rhopala corcovadensis*, *magnifica*, and *complicata*, the last of all these groups. After them were two plants in bloom of *Genetyllis fuchsioides*, from an order of plants (Fringe Myrtles) which is very rare indeed in this country, but common enough in the wilds of New Holland, in the shape of little bushes of various aspects. This *Genetyllis* is not unlike an *Epacris* or some *Diosma* in growth. The purple flowers are bell-shaped, and as big as an English Acorn, hanging down like a Fuchsia flower.

From the Messrs. Henderson, of Pine-Apple Place, we had another collection of very beautiful plants, of which *Danumara Brunonii* is one of the best seen. It was near five feet high, and wide in proportion. The thick, leathery, shining leaves put you in mind of blunt leaves of a Japan Lily. *Brownea erecta*, with longer and narrower leaves than those of the old *Brownea grandiceps*, *Rhopala magnifica*, and *corcovadensis*, and others with *Billbergia Leopoldii*, in fine bloom; and the new bulb-like plant introduced by Mr. Backhouse, and which the Messrs. Lee exhibited last spring, when Dr. Lindley named it *Valotta miniata*. Sir W. Hooker afterwards named it *Imatophyllum*; and Mr. Henderson had his plant named *Olivia*; but the three names are quite wrong; for this plant differs very materially from the three, or supposed three genera; and if the great men had seen the seed pods, as I did, through the kindness of Mr. Charles Lee, they would see the difference. But *Olivia miniata*, or *Valotta miniata*, or *Imatophyllum miniata*, is a charming plant, and as easy to manage as an *Agapanthus*. It blooms in winter, in spring, and all the year round. Until we get another Herbert to settle the name, I would prefer *Olivia* as the name which gives the nearest idea to gardeners of its aspect when out of bloom.

On another table was a collection of plants from the Garden of the Horticultural Society, consisting of three *Epacris*: *Candida*, *Delecata*, a blush sort, and *Densiflora*, another blush sort; four kinds of hybrid *Begonias*, in fine flower; that between *Manicata* and *Hydrocotylifolia* was very fine; another, between *Crassicaule* and *Manicata*, had large flesh-coloured flowers in the style of *Manicata*, from a strong stem inherited from *Crassicaule*; another, still finer, was a cross from *Incarinata* and *Crassicaule*, with a long, thick stem, and branching out with gay, pink blooms all the way up. This ought to flower all through the summer. Two *Heaths*, *Hyemalis* and *Lebana*, with the red and white-berried *Ardesia crenulata*; the latter is new, and a very desirable variety.

D. BEATON.

ANCHUSA CAPENSIS.*

THIS is, properly speaking, a biennial, but not quite hardy in our climate, unless in sheltered places. If the seeds are sown under glass, in March and April, and the seedlings transplanted, they will blow towards autumn, and frequently produce seeds. If sown in July and August, and protected in winter, they will blow early the next season. The flowers are blue; the plants low-growing, about twelve to eighteen inches in height, and a little rough-looking, like a Borage.

BULBINE FLORIBUNDA.

THIS is a pretty, bulbous flower, growing about a foot in height. The flowers are yellow and green. They come very near in appearance the flowers of the genus *Anthericum*, another beautiful division among Lily-worts. This Bulbine has often been confounded with *Anthericum floribundum*, a plant with white flowers,

* The following is in answer to "A Reader," who asks, "Where the seeds should be sown, and what flowers the plants bear?"

evergreen foliage, and strong, fleshy roots; the plant being easily propagated by divisions. The Bulbine is propagated by offset bulbs and by seeds. The seeds (if there is such a convenience) should be sown in a gentle hotbed in March; or in the greenhouse in April; or as soon as ripe in autumn. If the seedlings can be kept growing slowly in a cold pit, or frame, or greenhouse, or window, for the first twelvemonth, they will be all the better for it. After that, the bulbs should be allowed to get dried in winter, and enjoy a rest, either in a cold pit, or in a warm border, that may be protected from frost and much wet in winter.

PROTEA MELLIFERA.

The honey that distils from the flowers of this plant is preserved in South Africa as a good remedy for colds, &c. There is nothing, however, remarkably taking about the plant as an ornamental one, though the whole group is distinguished for their singular rather dull-looking flowers, and the very peculiar, leathery, tough foliage nearly common to them all. As soon as you can get the convenience of a mild hotbed sow the seeds. Sometimes they are long in germinating; but as soon as they do move them to a cooler place under glass, such as in a window, or greenhouse, and when the seedlings are several inches high pot and repot when necessary. The soil required is a good loam, with a mixture of a little broken freestone, silver-sand, and bits of charcoal. After the first year or two the plants will stand out-of-doors from June to the middle of October; but being a native of South Africa, it has not, that I am aware of, stood the open air winters of this country. The treatment of the genus from cuttings was, I think, previously given.

MELIANTHUS MAJOR.

The meaning of the family name is Honey Flower. So fully is this produced in the South of Africa, that it is collected in vessels and cloths by shaking the bush. The flowers are produced in large bunches, but are individually small, and of a brownish colour. The plant has bloomed out-of-doors in the south of England, and against conservative walls in the latitude of London, and even further north. The great beauty of the plant consists in the milky-green, large, deeply-notched, and serrated foliage. As far as I recollect, the foliage, when pressed, leaves on the hand a strong scent resembling ground Peas. The seeds should be sown in a sweet hotbed, and the plants potted singly when two or three inches in height. If no hotbed is procurable, it will be time enough to sow in April, under glass. The soil most suitable is turfy-loam, but the fresh pottings should have a little peat or leaf-mould. It would not be worth while trying the plant out-of-doors until it was, at least, two years old, unless there were a number of them. Against a conservative wall, or in a cool conservatory, it will always present a striking appearance. It cannot get fair justice in a pot, unless the pot be of large dimensions, and proportionate space is given to it. It is easily propagated by cuttings of half-ripened wood, and by suckers, which are apt to come from the roots.

PROTEA LONGIFLORA, COCCINEA, AND PLUMOSA.

See what is said of *Protea mellifera*. If you have many seeds, it would be advisable to sow some as they are, and soak the others for a day in water about 90°, before sowing them. Then, if you succeed in getting plenty of plants, you might try some against a wall the following year, giving them a protection of moss over the roots, and evergreen boughs over the branches in winter.

LEUCADENDRON ARGENTEUM.

This is a beautiful plant, belonging to the same Protead group, having handsome, silvery, silky foliage, and bunches of yellow flowers at the points of the

shoots. No good can be done with it without the help of a greenhouse or conservatory. For its foliage alone it is worthy of a place by-side the striking *Melanthus*. Treatment, the same as for the *Proteas*. If placed out-of-doors in summer, the pots should be protected from the sun's rays. They who visited the Botanical Gardens, at Kew, last season, would observe various contrivances for effecting that object. Plants in wooden boxes do not need such care, as the wood does not get heated like earthenware, cement, or iron, or slate.

POLYGALA SPECIOSA.

This is the neatest pot-greenhouse-flowering plant in the list presented. The foliage is small and sharp-pointed, and the flowers are large for the genus, and for the most part of a beautiful purple colour. The structure of the flower is very peculiar, and worth examining. In sowing seed, a hotbed must be procured, if possible, in March or April. The seed-pot should be half filled with drainage, then the half remaining with turfy peat and charcoal in a lumpy state, and then finer peat, or rather heath-mould on the surface, watering the pot well, and allowing it to drain before the seeds are sown; and then covering merely the thickness of the seeds, and after plunging the pot in the warm bed, covering the top of it with a bell-glass, or a square of glass. Much of the success in raising such comparatively tender exotic seeds as these depends upon the fact of not having to water the soil often after sowing. Provided the soil has been watered previously and allowed to drain, the seeds, if at all suspected to be old, should be covered with dryish soil, and moisture communicated more by the surrounding medium in which the pot is placed than by pouring water over them. Many an old, unripened seed has been rotted and destroyed by the latter process, that might have vegetated with the attention of the former. As soon as the seeds are up they should be hardened off gradually, by more air being given, and the pot moved out of the plunging material to the surface of the bed. As soon as the seedlings are one inch in height they should be singled out, and four or five of them placed at equal distances round a four or five-inch pot, and in soil nearly all heath-mould, with small bits of sand-stone and charcoal. In these pots the plants had better remain the first winter, and towards April the next year each may receive a four-inch pot, and when growing freely be topped back to make them bushy; when they may afterwards be treated like young, dwarf, bushy plants received from a nursery. The chief points in their culture will be these; a temperature from 38° to 45° in winter: fresh air on all favourable opportunities; pruning back a little after blooming; keeping close to encourage fresh growth, such as a cold pit; potting when that growth is proceeding, if necessary; more air and light to ripen the wood towards autumn; and housing in the greenhouse by the middle of October.

Plants are generally furnished by cuttings; and small side-shoots, a little firm at the base, taken off about April, and inserted in sand over sandy-peat, and covered with a bell-glass, strike the readiest. As the plants increase in size, a little rough, very fibry loam may be added to the heath-soil with advantage. Though well calculated for a heated conservative wall covered with glass, I am not aware that the plant has stood the winters of this country anywhere against an open wall.

ARCTOTIS GRANDIFLORA.

This is a short-lived Cape of Good Hope Asterwort, having large yellow flowers, not far removed in appearance from *Calendula* and other genera of this large composite order. It requires to be propagated often, either from cuttings or seeds, as it seems to be quite as much biennial as perennial in its character. Seeds sown in a slight hotbed, early in March, and the plants pricked off when fairly up, will bloom either in the greenhouse or in

the open air, in a warm border, towards autumn. Seeds sown in August and September, and protected over the winter under glass would bloom early in summer. It is very easily raised from cuttings, and will grow in almost any soil.

SOLANUM AGREGATUM.

The flowers of this, as may readily be imagined, are something like the Potato, and purple in colour. It is rather a compact evergreen shrub, a native of the Cape, and requiring for its well-doing in winter a rather warm greenhouse. The seeds generally vegetate very freely when they have the assistance of a hotbed in spring, and the sooner they are sown the more advanced the plants will be to meet the coming winter. The compost need not be particular; rough fibry loam, and a little leaf-mould, with good drainage, will grow the plant admirably.

DIOSMA ALBA.

This, like most of this genus, has small, white flowers, though a few have flowers red, and others blue. It is chiefly desirable for its compact, Heath-like appearance, and for the beautiful fragrance emitted by the foliage when the hand is drawn along a shoot. Seedlings are generally easily raised when the seed is sown in a mild hotbed in spring. Cuttings also easily strike when made of small side-shoots getting firm at the base, inserted in sand under a bell-glass, and kept shaded from sunshine, and in a temperature from 45° to 55°. The plants, in winter, require an airy atmosphere, and a temperature ranging not below from 35° to 45°. When young, heath-soil should be exclusively used; but, as years go on, and larger pots are given, a little fibry loam had better be added. A shady place out-of-doors will suit it from the beginning of June to the middle of October.

DOLICHOS LIGNOSUS.

This beautiful climber, a native of the East Indies, though grown in this country for the best part of a century, is more seldom met with on the rafters of our greenhouses than its importance demands. Some years ago, there was a splendid specimen in the large conservatory of the Horticultural Society, at Chiswick, that was a perfect mass of bloom during the spring and early summer months. The flowers are rather small individually, but produced in wonderful profusion, and being of the Pea order, are rose-coloured, with a purple keel. The seeds being hard will vegetate sooner if, before sowing, they are soaked in water of about 80°, for a dozen of hours. If sown immediately in a gentle hotbed the plant will become of some size during the first summer. The plant is also easily raised from cuttings of the young shoots, inserted under a bell-glass in April. This plant would just be in its element on a glass-covered conservative wall, with enough of artificial heat to prevent much frost entering. It is too strong-growing to do much good in a greenhouse in a pot, and a neglect of watering a time or two, in such circumstances, would cover it with the red spider to a certainty. Its appropriate place is along, and dangling from, a lofty rafter, or mounting a lofty column. Give it plenty of nourishing earth room and it will look boldly at the lofty arches of the Crystal Palace, and mount them too. In its young state it will relish a little peat in the compost, or fine, reduced leaf-mould. As it gets older, good fibry loam suits it best; and when in bloom, and making its young wood, it will enjoy good soakings of weak manure-water. The chief points in its culture, are to prune freely when done flowering, and then especially, but at all times, when not in bloom, not to spare the exercise of the syringe on the shoots and foliage.

ERIOCEPHALUS CORYMBOSUS.

I am not acquainted with *Corymbosus*, and know not

whether it be a synonyme or a new one. The others are neat little shrubs from the Cape of Good Hope, and with the exception of *Purpureus*, produce Aster-like yellow flowers. Sow the seeds in a gentle hotbed as soon as convenient, or in a pot in a warm corner of the greenhouse, at the end of April, covering the pot with a square of glass. The soil wanted is equal parts of heath soil and fibry loam, well drained. Cuttings of small, half-ripened shoots, strike readily in sand, under a bell-glass, after April.

TEPHROSIA GRANDIFLORA.

This is a Cape evergreen shrub, with reddish, peablossomed flowers, considerably resembling those of a Galega. When raising from seeds, it is advisable to steep them for some time in warm water, unless there are doubts of their being very old, when the process should be omitted. Sow them in peat and loam in a hotbed in March. For want of a hotbed, we have known such seeds successfully reared by plunging the small seed-pots in a box filled with charcoal, and keeping it near the kitchen fire until the seeds vegetate, covering the top with a non-conducting substance, such as moss kept moist above the glass that covered the pots to prevent the evaporation of moisture; and when the seedlings were fairly up, taking the pots to the window, or the greenhouse, and sheltering them for a time with a bell-glass, a tumbler, &c., and a little shade, until they were inured to the change.

When there is no hotbed, and such trouble would be too tedious, it will generally be found advisable to defer sowing the seeds of greenhouse plants until the middle of April, as the sun will then be gaining power. These plants are easily propagated by cuttings of small half-ripened shoots, inserted in sand, under a bell-glass, in April and May. In the first pottings, either from seed or cuttings, heath soil and sweet leaf-mould, and silver sand, should constitute the chief materials, but as the plant increases in size, more and more fibry loam should be added, until it constitutes fully one-half of the compost. As soon as they reach the flowering state, the plants should be cleaned and pruned back after blooming, be kept close and warmish, such as in a cold pit, to encourage fresh growth; have that growth hardened, first by more air being given, and then by moving off the sashes altogether towards autumn, that the wood may have the full force of the sunbeam, and be housed either in a dry, cold pit, or in the greenhouse by the middle of October.

I have thus run over this list, presented by "A Reader." I have no objection whatever to such lists coming in, and being replied to; quite the reverse; but I know that the gardening public, just like any other public, is an animal with many and divers tastes requiring gratification, and therefore, to mitigate the chances of displeasing it, it might be as well not to have too many inquiries from one person at one time.

One word more. I know something of the pleasure that amateurs feel in raising plants from seeds, and more especially, if these have been sent from a long distance by a loved friend; as every twig and flower thus becomes commemorative; but unless for such purposes, the young beginner would generally more quickly arrive at his object by allowing his packets of seeds to remain in the drawer, and apply to a nurseryman for a few nice, young plants, on which to try his cultural skill. Apart from the pleasure to which I have alluded, and it is no small one, the division of labour principle holds true in gardening as well as other things, and they whose chief employment is propagating plants, can afford to sell young plants of *Protea*, *Leucadendron*, &c., cheaper than even the comparatively initiated can raise them. While on this subject, I may also remark, in answer to the inquiry, how two men can be equally honest, who

advertise plants of the same thing, the one for 5s., and the other for 2s. 6d.; that I could see little of honesty involved in the question; nor could I say which was the most desirable to attain of the two without seeing them, as it is just possible, that what was cheap at 5s. in the one case, might be dear at 1s. in the other.

R. FISH.

ACACIAS.

A VERY large assemblage of stove and greenhouse plants, remarkable for their numerously-produced generally yellow flowers, appearing often as early as February, and different species continuing to produce bloom till June. Yet, though beautiful in both foliage and flower, they are not so generally cultivated as might have been expected. The reason is, I judge, because the great metropolitan exhibitors do not think many of them fit objects for exhibition. This is a mistaken notion, in my opinion, and I trust more of them will be shown in future. We want, in our great exhibitions, something new, something with a more elegant outline. The public begin to be tired of seeing the same species of plants, year after year, grown in round-headed bushes, in the primnest of forms. Many of the Acacias would, if properly grown, serve admirably to give a varied outline to the mass in the exhibition tents, and thus render the sight not only novel, but more in accordance with the best and purest taste. I think I shall do some service by selecting out a few of the most manageable and fittest for the purpose, such as will grow and flower freely in pots, and yet be so new, or rarely seen, as to be attractive on the score of novelty. The stove species are too rampant growers, and, therefore, I discard them altogether, confining myself to the best greenhouse species only.

ACACIA DRUMMONDII.

This most beautiful species was introduced by Mr. Veitch, and is a remarkably distinct species. It is quite new, and as yet very little known. It forms a neat, handsome plant, branching freely when stopped. The young shoots are angular and channelled, becoming round when aged. The leaves are bipinnate, and the leaves on the leaflets are opposite, bluntly ovate, and of a pleasing dark green. The flowers are produced in spikes springing from the stem in the axils of the compound leaves. It has no thorns. I have not seen it actually in bloom, but was informed, at Mr. Veitch's, that the colour is a deep golden-yellow. I have a plant now standing before me, not quite six inches high, with four branches, and each branch shows several spikes of flowers. Thus this species possesses three good qualities. It has a good habit, pleasing foliage, and produces abundantly handsome spikes of golden blossoms; and if I am not mistaken, those flowers have a delicious perfume like new made hay. The only objection to it as an exhibition plant is, I fear, the flowers will come too early; but that may be overcome by keeping the plant in a cold pit (for it is half-hardy), giving plenty of air at all seasons just above the freezing point, and shading it from the early warm sun in spring.

Soil.—The soil I grow this choice new plant in, is a compost of three parts heath-mould, and one part light loam. I do not think it will thrive so well in a richer soil; at all events, it would, in it, grow too rapidly, and then make a long, branched, straggling bush. For the same reason, it is advisable to keep it rather under-potted. In winter, I give it but little water, but plenty during spring and summer. By this treatment, it will make nice, short, stubby branches, and be covered with spikes of flowers. It is too rare, as yet, to recommend it as a plant for the conservatory border, but as a pot-plant for the stage of the greenhouse, I know none to surpass it.

Propagation.—It is not difficult to propagate by young cuttings planted in sand under a bell-glass in heat. I prophesy for this plant a great popularity when it becomes more plentiful, and its merits better known.

ACACIA GRANDIS.

A species somewhat resembling the old *A. pulchella*. I have my doubts whether it is a species, for seedlings from it sport very much, and many cannot be distinguished from the one last mentioned (*A. pulchella*); but it is a decidedly improved variety. The foliage is pinnated, and larger than the species, and the habit is much better, it being stouter, and the branches not so pendant. The flowers are globular and large, and of a glowing golden colour. The plant, when of a full size, is completely covered with them.

This is a plant, when genuine, that cannot be too highly commended, whether for exhibition in May, its season of blossoming, or for the greenhouse. I have seen noble specimens of it in conservatories, and a finer ornament for such a place I never saw.

Culture.—To form a handsome plant, take a young one, six inches high, stop the leading shoot, and several branches will start, train out the lower shoots as soon as they are long enough horizontally. Tie up straight to a stick the leading or top shoot, and as soon as it is six inches high, stop it also, and get a number of shoots to form a second lot of branches; when these are long enough, train them out, like those below, in an horizontal position. Tie up the top shoot again, and so proceed till you have got a perfect handsome pyramid of branches. No plant is better adapted to form that shape, and as it advances, keep turning it round (unless you possess a span-roofed house), to make all the sides equal. Without this training, the plant will become leggy, and form a loose, unsightly head.

Soil.—I grow this plant in half loam and half peat, it being more woody than *A. Drummondii*. It also will bear a larger pot and more water, especially when growing freely. It is a very hardy greenhouse plant.

Propagation.—Half-ripened shoots, cut into short lengths, and inserted in silver sand under a bell-glass, in moderate heat, strike freely.

T. APPLEBY.

WOODS AND FORESTS.

THE LARCH.

(Continued from page 335.)

In my last paper on this subject, I confined myself to the many uses to which this valuable tree may be, and is, applied, proving sufficiently its great value to the British planter. I now resume the subject, and shall write upon,—first, its propagation, including nursery treatment; second, the soil and situation in which it will grow; third, planting; and fourthly, thinning. First, propagation. This may be conveniently divided again into,—1, Gathering and preparing the seed; 2, Preparing the ground; 3, Sowing the seed; and 4, Transplanting in the Nursery.

1. *Gathering and Preparing the Seed.*—It is well known that the Larch seed is produced and contained in cones—hence, the term *Coniferae*, or cone-bearing trees. To procure the cones of the Larch we must go into the plantations of that tree. It bears them plentifully at fifteen or twenty years old. In gathering them, care should be taken to gather such only as are on healthy trees. A tree in a sickly state often produces the greatest number of cones, and the gatherers, unless closely watched, are too apt to fill their baskets from such trees, thus perpetuating a sickly progeny. This evil must be avoided by strictly insisting upon the cones to be taken from straight, handsome, healthy trees.

They may be gathered any time from October to April, but the earlier after the seed is ripe the better. When the gathering is finished, then prepare a kiln to cause the cones to open and throw out the seed. The cone-kiln is very similar to a malt-kiln. The flooring is made of tiles with small holes in them, about nine feet from the fire, which should be made with coke or charcoal. Over these tiles a fine wire-cloth should be stretched to catch the seeds. Then lay the cones on it, not more than a foot thick. The fire should be kept gently burning till the cones are all open. Then let some men turn them over once or twice, giving them a gentle beating with sticks to cause all the seed to drop out; then rake off the cones and collect the seed. To make it quite clean and bright, sift the dust out of it through a sieve fine enough to retain all the seed. It may then be put into bags, and kept in a dry room till the sowing season.

2. *Preparing the Ground.*—A piece of very clean, light, sandy ground should be chosen for the nursery seed-beds. Many of our heathy moors would yield a few rods of excellent land for such a purpose. It should be carefully dug one spit deep early in the autumn; every stone, Fern or Heath roots, and all weeds whatever, should be carefully and diligently picked out. If convenient, a forecast of a year's probation would be very desirable;—I mean, the taking off a crop of Potatoes, or Mangold Wurtzel, to cleanse the ground, would bring it into fine condition as a seed ground. In the early part of winter this ground should be thrown up in ridges, to be pulverised and benefited by the frost. Then, the first week in April, weather permitting, let the ridges be thrown down, and the whole piece thoroughly forked over, leaving it as smooth and level as possible. It is then ready for the sowing day.

3. *Sowing the Seed.*—Choose a fine day, after there has been three or four dry days, and prepare, early in the morning, the beds to receive the seed. Let the ground be laid out, with small sticks at each corner, in beds three feet wide, with alleys or walks between them, fifteen inches wide. I find these the most convenient widths, though, if the ground is plentiful in space, I would allow three inches more for the walks. When all the beds are set out, then take a rake made of a flat piece of board, eighteen or twenty inches long and four inches wide, bevelled to an edge next the soil; with this rake draw off the surface-soil of half the bed, half-an-inch deep into the alley, leaving the edge quite straight, then step into the opposite alley, and draw off half-an-inch from the other half of the bed into it, and so proceed till all the beds are done the same. In order to get the work done quickly, a second man should follow, scattering the seed on the beds. It may be sown rather thickly, just leaving space sufficient to allow each plant when they come up to stand by itself, for they must only stand one year in the seed-bed. Another very handy, dexterous man should follow the sower, with a clean, bright spade; with this implement he should make the soil in the alley very fine, and then take up a small portion at a time, and smoothly and evenly scatter it upon the seed, half-an-inch deep, without displacing it. (When the soil was very light, I have had the seed very lightly patted down with the back of the bright spade previous to covering it.) As soon as one bed is finished, then take a short-toothed rake, and level the soil very lightly with it; this must be done very lightly and carefully, or the seed will in places be uncovered; then place a line at the edge of the bed, two inches from the seed, chop down the side, and do every side the same throughout the whole; then rake the walks, and the operation will be neatly finished.

4. *Culture of Seedlings.*—During the spring, should very dry weather set in, the seed-beds must be watered every evening till gentle showers come and supersede the necessity. The plants will make their appearance

towards the end of May, and seedling weeds generally will come up with them. These must be weeded out by a careful person while yet in the seed-leaf, for if allowed to attain any size many young Larches will be drawn up with them.

Hares and rabbits are exceedingly fond of the young plants for food, therefore a fence that will keep them off is indispensable. A wall high enough to prevent them leaping over is the most effectual protection.

I have been, perhaps, somewhat too particular in describing the necessary operations in this method of raising young Larches, but I do think full instructions in such an important matter is desirable, even at the expense of being thought prolix and tedious.

5. *Transplanting.*—Whilst the seedlings are growing, the ground to transplant them into should be in a state of preparation. I know no better plan than that described above for the seed-ground, namely, a good and efficient digging the previous autumn; a crop of some cleansing vegetable, and the throwing up the ground into ridges the following autumn only; the levelling and forking process must be done as soon as the ground is dry enough in the spring.

There are two ways of transplanting young Larch—one with an iron-shod dibber, making holes across the bed, and putting a plant in each hole; and the other, what is called bedding-in with a spade. Now, I do not think it of much consequence which plan is adopted for one-year seedling Larch; indeed, I am rather inclined for the dibber plan, because the young Larch has seldom any branching roots, and, therefore, they are not cramped by being dibbled in. It is, besides, a much quicker operation. Whichever plan is adopted, here they may remain for two years, and the only care they require is to be kept well weeded. After that time they should be taken up and transplanted into nursery rows, one-and-a-half feet wide, and a foot apart in the rows. In two years time they will be well rooted, and tall enough to plant in their final situation in the wood or forest.

T. APPLEBY.

(To be continued.)

SOWING SEEDS.

ALTHOUGH the wintry appearance of the weather, at the time I write (the last day in January), almost forbids the hope that the ground will be in a condition fit to receive seeds by the time this number of THE COTTAGE GARDENER reaches its readers, yet we all know that sudden and unexpected changes do now and then take place, and though it may not be so sudden as to enable the cultivator to work on every soil, yet it may, perhaps, be done on the lightest and driest, and, in due time, on the others in succession; I, therefore, this week offer a few notes on the sowing of seeds in general, with such other remarks as their cases may require.

In the first place, the *condition of the ground* is to be taken into consideration as being of paramount importance; for although our native trees and wild plants ripen their seeds, which are often distributed by the winds, and grow in places far from promising, still it must be remembered, that these plants or trees are indigenous with us; and the manner in which they reproduce themselves is the one Nature intended for them. This is not the case with many productions of the garden, which, being the improved varieties of plants natives of more favoured climes, may, reasonably enough, be expected to require a little more care in their cultivation; yet it is surprising to see how plants from the temperate regions will endeavour to accommodate themselves to the altered circumstances in which they are placed.

Most annuals which ripen their seed with us out-of-doors will, if left alone, sow them and reproduce them-

selves; while many greenhouse-plants ripening their seed out-of-doors, and such seeds lying in the ground all winter, will vegetate the ensuing season in great numbers. In this respect, the Scarlet Geranium is very remarkable, while the *Salvia*, *Verbena*, and *Celsia*, are all equally prolific, and the *Cuphea strigulosa* has become a perfect weed, growing in gravel walks and open places with an avidity that would go far to condemn it, were its merits as an excellent autumn flower not a sufficient recompense for its audacity; but it is proper to observe, that, with the exception of this *Cuphea*, most of the other seedlings would perish with us if left to propagate themselves by seed, as above, for such seedlings rarely flower and ripen seed again the same season in time for the like operation going on, and hard weather setting in, they are cut off. In fact, some of them, as the Scarlet Geranium, rarely flower until the second year, that the seed which is produced and self-sown is that from plants saved over the winter, and planted out at the proper time in May. However, we may learn much from the above in our treatment of seeds, which is certainly not always the best adapted to their welfare; but, on the other hand, the wants we have for their produce render it necessary that we should waive our ideas of what is merely essential to the seed's germination, and see what can be done towards making the produce available at the time we want it, which, in a great measure, depends on the time we sow the seed.

Considering, then, that certain garden products are from milder climates, we must give them all the encouragement that our care can afford. Tomatoes, Ridge Cucumbers, Dwarf and Scarlet Runner Beans, and other things, must not, then, be expected to vegetate and grow under the same circumstances as weeds do, although, in speaking of that, I may mention that I have had plants of *Tomatoes* come up on a border where they had fruited the preceding year, and some fruit had been left on the ground and remained there all winter, or rather was buried in the digging; but then, such plants were too late to be of any service; proving, as in the case of the Geranium, that plants from the tropics, though they will live and flourish with us during the summer months, are not possessed of sufficient power to reproduce themselves when not assisted by the care and skill of the cultivator. Seeds, therefore, from these districts, ought only to be sown after the season is so far advanced that the sun has had time to warm the earth, and evaporate the cold deluging rains of winter; but in order to expedite that matter, or rather to make what use of it we can when it is ready, we prepare the tender plants beforehand, by rearing them under glass, or in such a medium as best suits their infant state; thus, seed of Cucumbers or Tomatoes that would not easily vegetate in the open ground in March, do so with avidity in the hotbed, and, by being carefully tended then, are fit to plant out early in May. Their transition from the warmth of the hotbed to the open air being so gradual as not to occasion the loss of health to the plant operated upon, while, by so doing, they are advanced several weeks in their growth, more than they would have been had they been left to unassisted Nature for their well-being.

The ground on which such seeds as *Carrots*, *Onions*, and other seeds are sown, ought to be good, in order that it may produce a vigorous crop; but as this has doubtless been all arranged beforehand, and the manuring, &c., having been all done at the most suitable time, little remains but to sow the seed at the most fitting opportunity, which is when the ground is sufficiently dry to allow of its being trampled upon without its becoming so consolidated as to become almost impervious to the atmosphere; when such is the case, which it often is in wet seasons, and on cold, clayey lands, it is prudent to defer the sowing a little later; or to alter the mode of sowing it, so as to avoid that trampling on the ground

so detrimental to everything growing on it. Small seeds, as *Onions*, *Carrots*, and other roots, might be sown in beds four feet wide, and the whole process being performed by the operator standing in the alley, the harm and loss will be very trifling, for the space occupied by the alley is not entirely lost, the plants nearest to it deriving considerable benefit from their tops being allowed to hang over it in the latter part of the season. And as the season is fast approaching for sowing *Onion* seed, we advise all who have a chance to do it to embrace the first opportunity. *Carrots* need not be sown before April, unless the weather should be very tempting and threaten to continue dry.

Besides committing the seeds to the ground when that is in good order, it is also advisable to take such means as will preserve the young plants from the evils they are exposed to when they make their appearance. *Onions* are, perhaps, more exempt from such evils than many other crops, but *Carrots* suffer severely in some soils and seasons, and nothing but great care and perseverance will ensure a good plant of these, the slug playing such havoc amongst them. Now, in order to prevent this as much as possible, recourse must be had to frequent digging and preparing the ground in winter, for, depend upon it, these gentry do not like to be turned out of their comfortable winter quarters on a frosty morning, which is the best of all times for doing it. One thing, however, must always be kept in view, the top soil ought to be open and friable, so that at the proper time it may receive the seed, and allow of being carefully raked over; some soils, certainly, hardly require the use of a rake at seed time; but what is meant here, is to have the ground in such a condition as to receive the seed amongst such fine soil as would, with very little trouble, go through a sieve, stones excepted. Now, where a soil has derived the full benefit of the winter's frost, a portion of the top, at least, ought to be so fine as to do that.

The direction that seeds, in a general way, ought to be covered with soil as thick as four or five times their bulk, may be regarded as a fair criterion; but certain seeds on which the birds prey very much may be covered deeper, as, for instance, the whole of the Cabbage tribe; but as these suffer most in summer, when the ground is dry and light, an extra depth at that time is useful in other respects. No means must be spared to render the ground fit for its reception; and, excepting such crops as have to brave the whole or great part of the winter, which may, perhaps, be benefited by having the ground rough around them, all others would seem better if indulged with a few inches of fine mellow soil, while that beneath ought not to be too rough or obstinate; but as it is not always possible to get it so fine as the top portion ought to be, it is right here to say, that it had better be rough and coarse than in the soddened condition consequent on its being trampled upon in wet weather, or, what amounts to the same thing, dug in that state.

J. ROBSON.

NOTES FROM PARIS.—No. 7.

CHINESE YAM.—VINE MILDEW.—TREE-PLANTING.—POT PROTECTORS.

At the Meeting of the *Academie des Sciences*, which took place in the early part of January, a notice of what have been familiarly called "Chinese Potatoes," was delivered by Prof. Decaisne. The following is a summary of the report which has just appeared:—

The plant in question is the *Dioscorea Bullatas*, the tubercles of which are considered to be analogous to Potatoes; they have, therefore, been mentioned and recommended as a substitute for that esteemed esculent.

These tubercles, it is stated, in the notice read to the

Academy, form a very agreeable and nutritious article of food, and may be cooked in several ways, both boiled and roasted.

About five years ago, a particular species was sent from China, by M. de Montigny, French Consul at Shanghai, and M. Decaisne has now given an account of the experiments, which he has for some time been directing, to test its hardness and its nutritive value. He thinks this species differs sufficiently from *Dioscorea Japonica* to merit a distinct name, and he has given it that of *Battatas*.

The tubercles of *Dioscorea Battatas* are always perfectly simple, without any branching, and they strike into the ground in a perpendicular direction. They are, on an average, about the thickness of one's wrist, and their length varies between thirty and thirty-five centimetres (fifteen to eighteen inches). The weight of those at the Garden of Plauts here has been, in general, about 300 grammes (a little over ten ounces); sometimes, however, nearly 600 grammes. Their substance is white, tender, and mealy. In respect to their chemical properties, these tubercles much resemble Potatoes, though it has been ascertained they only contain 16 per cent. of amidon, while Potatoes contain 20 per cent. The tubercles of the *Dioscorea Battatas* contain, on the other hand, an azote principle, a sort of gluten, which adds a little to its value as an article of food, and which is not found in the Potatoes. This azote, however, is only about 2 per cent. Besides entering with facility into every kind of culinary preparation, they also produce starchlike Potatoes.

The plants which were grown under the direction of M. Decaisne were planted near the end of April, and finished their growth by the middle of October; but in a warmer latitude than that of Paris, they might be expected to grow much more rapidly. It has been ascertained that the roots will keep in the ground during winter, and they have even been uninjured in a temperature of twelve or fourteen degrees of frost.

The tubercles of the *Dioscorea* may be stored and preserved as readily as Potatoes, and they are not apt to sprout like the latter when placed in cellars. They are propagated with equal facility.

Such are the recommendations of this novelty. Unfortunately, it has one drawback, which may prove an obstacle to its general introduction, and that is, the great length of the tubercles, which makes it somewhat difficult to get them out of the ground. The Chinese, who have cultivated this plant from time immemorial, usually grow it on ridges twelve or eighteen inches high, and this practice, in a great measure, removes the objection just noticed, for when thus treated, the difficulty of extraction is so far overcome. But it is only in field culture that this objection can have any force.

When grown on a more limited scale, as in gardens, the lifting of the tubers is attended with but little inconvenience, and, probably, a mode of treatment suited to the circumstances may be adopted, which will enable us to introduce it extensively in farms. The average length of the tubers, or rhizomes, is about eighteen inches, and they are always thickest at the lower extremity. It is this peculiarity which will make them difficult to take out of the ground when grown largely as field produce, but, on the other hand, their length is attended with one real advantage, for a great number may be grown in a small space, and a large mass of nutritious substance may be thus produced.

It has been calculated by Prof. Decaisne, that twenty plants may be grown to the yard square, and that the produce thus obtained is more than double that of Potatoes grown on a similar extent of ground. It is, however, premature to give a full estimate of the value of this plant. Other and more extensive experiments, both in growing and cooking the tubers, will, doubtless, lead to a modification of the opinions which may be now entertained respecting them. Enough, however, has been done, to show that with careful cultivation, these "Potatoes of China" will deserve a place in our kitchen-gardens. The *Dioscoreas* belong to the order of that name, and are all twining shrubs, with tubers or rhizomes, and heart-shaped leaves. *Dioscorea discolor* is a beautifully variegated stove species, which may be taken as an excellent example in respect to the general habit of the genus. Most of the species pro-

duce what are known under the name of Yams, which are their large, fleshy, farinaceous tubers. In tropical countries these Yams are much esteemed as an article of food, being to the natives what Potatoes are to the inhabitants of more temperate climates. The flowers are for the most part small and insignificant, but the foliage and general habit of the plants make them very ornamental for conservatories, where they should be trained to pillars, or on trellis work.

At the same Meeting of the *Academie*, the Secretary read a letter from the Minister at War, containing a notice of a novel application for the prevention of the *Vine disease*. The principal passage is worth quoting.

"Among a great number of recipes which have been brought into notice, and which experience has shown to be useless, one only appears to have answered the purpose, and that consists simply of dusting wood ashes on the leaves of the Vines. M. Vial, of Cheragas (a Department of Algeria), has the credit of introducing this new mode of treatment, the beneficial effects of which were tested during the last season on several crops in different soils and situations. The discovery of M. Vial is very likely to be of advantage to the Vine-growers of France, and, I believe, the notice of it will be interesting to the Academy. I, therefore, beg you will have the kindness to place before the members the accompanying report, which I have received from the Prefect of the Department alluded to. In calling my attention to the experiments of M. Vial, and which he has had an opportunity of verifying for himself, that functionary has forwarded me several certificates from different colonists who have made use of the new remedy. One of these documents is from M. Borely-Lasopie, Mayor of Bonfarieck, one of the chief Vine-growers of the country."

These documents have not yet been published, but the testimony of the persons mentioned is entitled to respect, and it is now for Vine-growers to try whether an application of wood-ashes is more effectual than sulphur as a remedy, or less objectionable as an application, with respect to the flavour of the fruit.

A recent number of the *Estafette* contains a communication signed "M. J. B. Thomas," on the *planting and general management of trees*. The directions given are worth notice, as being those of an arboriculturist in a country where agriculture, and everything relating to it, is under the encouragement and control of the Government.

M. Thomas appears to have been induced to publish his views by the recent exploits of Mr. McGlashen, of Edinburgh, in this quarter, and of which he takes a passing notice. The following is a translation of his principal statements:—

"The removal of a fine old tree may sometimes be necessary and useful, but it would be a mistake to seek to convert into a general rule what can only be a rare exception. Whatever may be the merit of Mr. McGlashen's ingenious machine, we consider it unfitted to insure the subsequent success of every description of plantation, especially of those trees within the bounds of Paris. Notwithstanding the distinguished patronage which it has lately received, it can only be available in exceptional cases. Indeed, the transplanting of a tree, that is, its removal from one place to another, is only a small and very insignificant part of the operations incidental to its successful treatment. It is neither the lifting nor removal of a tree which forms the most important question in arboriculture, but its subsequent growth and prosperity; and these results are the ordinary consequences of putting in practice those rules which true science indicates, and which mature experience sanctions.

Let me shortly observe, that in order to insure the health of trees after planting, the following directions should be carefully pursued:—

1st. The holes destined to receive the trees should be dug a year or six months before the time of planting.

2nd. If the soil is not sufficiently rich, it should be replaced by fresh earth, containing the most numerous elements of fertility.

At different times we have directed attention to the importance of using in the bottom and sides of the holes a prepared compost from three to four years old. This

should consist of road-scrappings and animal or vegetable refuse mixed with light loam.

3rd. The most suitable time for planting all kinds of trees, evergreen and deciduous, is between the middle of October and the middle of November. But where the ground is damp, and the roots of the trees almost always in water, the planting should be deferred till the month of March, or such time as the trees begin to break their leaf-buds.

Shortly before the rising of the sap in the spring, the soil should be drawn from the trunk of the tree all round, so as to form a gentle ridge, to collect the rain and allow the sun to act upon the roots near the surface.

This practice of forming a shallow basin at the bottom of each tree is attended with the very best results, as the young Elms in the Garden of the *Palais Royal* sufficiently prove.

We have frequently had occasion to show that the trees planted in Paris—in that Paris where science has her throne—were too often treated in ignorance of the first principles of arboriculture. The unfavourable results which have been obtained have only served to increase unnecessary expense.

If Mr. McGlashen could contrive a machine suited to remove the errors which we have long pointed out, in vain, to the attention of the authorities, he would be entitled to the thanks of every arboriculturist, not only in Scotland and France, but throughout all Europe.

During the present severe weather the question of shelter takes precedence of most others in horticultural matters, and M. Thomas's mention of the garden of the *Palais-Royal*, leads me to notice a neat and effective mode of protecting the roots of trees in tubs and boxes, which I have seen adopted there. It consists simply of surrounding the tub with wheat straw to the thickness of several inches; the straw is, of course, placed perpendicularly, but so neatly is it attached to the wood, by means of string and nails, as to be scarcely observable. Where, as in most cases, the boxes are raised on pegs, or feet, a few inches from the ground, a quantity of straw is placed underneath, and the covering at the sides is continued to the ground. This practice is adopted with hardy evergreens and other young trees of an ornamental character, which do not usually require protection when grown in the open ground; but, however hardy trees may be in the ground, it is always a wise precaution to afford the roots some shelter when placed in boxes or tubs.

For the last fortnight we have had winter in earnest, and the ground has been covered with ice and snow, the latter attaining the depth of nearly eight inches within Paris. The temperature during that time has ranged between six and eleven degrees below zero (Centegrade); that is, I think, between twelve and twenty-one of Fahrenheit.

In many of the more southern Departments, according to accounts, more snow has fallen this last fortnight than had fallen for ten years before; and even those Departments where snow is seldom or never seen, have been visited this winter. This occurrence has led all the "oldest inhabitants" to prognosticate a fine summer, and an abundant harvest.

At present all articles of consumption are excessively dear, and nothing is heard but a general murmur. Vegetables, which in Paris are always the sure stay of the poor, are now nearly quite out of their reach.

Since the foregoing was written, the wind has changed, and we have had a supply of rain. The snow and ice are rapidly disappearing, and the glass continues to mount.—P. F. KEIR.

THE LAST OF HIS LINE.

(Continued from page 320.)

By the Authoress of "My Flowers."

AFTER the death of Lady B—, the vials of affliction began to be poured out upon the head of Sir Charles very quickly. The commingled history of his daughter and himself was one of the most melancholy that could be imagined. No romance could exceed hers, if romance were made up of sin and wickedness. Poor thing! her parentage

and education were disastrous; yet still her own punishment was severe, and she lived to be the instrument of torture to her father! Oh, let parents and children deeply ponder their ways! If not for the Lord's sake, yet for their own, let them seriously consider! Terrible are the strokes dealt by the hands of those we have armed against ourselves—of those we have led wrong and injured! and terrible must it be for those who have dealt the blow, to look upon the ruin they have caused, and feel that they have been their own avengers!

Sir Charles remained some time among his friends in G— after his lady's decease. He could not tell what to do with Matilda, now growing up into a handsome, showy, dauntless young woman. He was unfit to take charge of her himself; she was too old to be placed at school, and much too independent for people in general to undertake and manage. At last, one family of intimate friends, who settled at R—, offered to receive her as a resident among them. They were sorry for her unprotected position, and were under much personal obligation to Sir Charles. Their circumstances were not easy—they necessarily lived in great seclusion; they could give her no advantages of society, nor introductions to beneficial acquaintances; but they would, at any rate, give her a home, and do all they could for her.

A very short residence in Sir John D—'s family displayed her character as of the worst kind. Deception, lightness of conduct, daring effrontery, and total want of principle, developed themselves so fully, that it was impossible long to retain her as an inmate, and her unhappy father was written to to come and remove her. Matilda's power over him was unbounded. He took her away, but unconvinced of her depravity, or too unsuspicious of vice to perceive it. A heart and mind crooked and callous do not notice the evil dispositions of others, or pass them by lightly or unconcernedly, until the iron enters their own souls. Their moral perceptions are blunt and dim, and till their own feelings are wounded, they do not see or perceive.

Sir Charles applied to a connection of his late wife to undertake the charge of his daughter, which was assented to; but the same results followed. Mrs. S— could do nothing with her; she was unmanageable and incorrigible, and her father was again sent for. He had been living in Paris, but came over to receive his child once more under his own wing. He now placed her as parlour-boarder under the care of some ladies, in a country town, where she remained for a time; but at length invited herself to the house of her father's old friend, Sir John —, where she was kindly received, and in a short time sent on to join her father in London. A few weeks after this, it was discovered that she was located at the inn at N—, near the residence of her friends, running up a long bill at a dressmakers, and amusing herself very unconcernedly, without acquainting her father or her friends of her situation. Upon this, Sir Charles determined to take charge of her himself; and he took her to reside with him in Paris. Dangerous as every place must be to a young woman of Matilda's stamp, France and Paris were the most hazardous. In such an atmosphere, and with such a parent, one like her was sure to come to a fearful end; and now, for the first time, she drove an arrow into Sir Charles's heart. She eloped with the husband of another woman, and fled with him to Spain.

A veil must be drawn over poor Sir Charles's state of mind, when this idolized, highly-esteemed daughter left him on such a mission. Language fails to portray all that arose and strove in the dark mind of a "free thinker" when such a blow fell. He was in Paris—alone—childless—forsaken.

Matilda and her equally-depraved companion returned after a time. She had left Paris in man's attire; she returned to it in rags, and barefooted. They then proceeded to London, where she continued until deserted and penniless; when it seemed as if her Heavenly Father had pity yet in His loving heart for the poor, neglected offspring of such erring parents. She met, one day, in the street, a young man, with whom she had formed an acquaintance in bygone days. He was inferior to her in birth, but was respectable and wealthy. He was a coach proprietor, and in the days of "the road" drove his own coach. In Matilda's flying and daring excursions she had made his acquaintance, and, I believe, he liked her then. Certain it is, that he now offered

her his hand, wretched and forlorn as she was, and she became his wife.

Strange and unlooked-for circumstances occur in our lives, or the lives of those around us, which are utterly unaccountable, except viewed by the eye of faith. The overruling Providence of God can alone explain the mysterious and wonderful shiftings of the great tragedy of life. Romantic and imaginative as the writings of some men are, the doings of the Lord are more striking and wondrous still.

Matilda had been in the deepest abyss of poverty and abasement; she had written imploring letters to all the gentlemen she had known in better days, depicting her destitution, and beseeching a trifle to save her from starvation. Some had responded liberally, pitying her condition; others paused, knowing more of her history; but still her condition was wretched, and there seemed no door of escape that could possibly open before her.

There is nothing too hard for the Lord. Let us remember this, not to encourage ourselves in our wickedness. Matilda's history will forbid us plainly to do *that*; but to prove that He is mightier than we are—mightier than Satan—"mightier than the voice of many waters, yea, than the mighty waves of the sea." Let man's condition be ever so hopeless—ever so low—ever so terrible:—let sorrow, affliction, poverty, peril, the world, Satan, sin, persecutions, disaster, all rage against us—yea, let death threaten us: the Lord is mightier still! He "sitteth upon the circle of the earth, and the inhabitants thereof are as grasshoppers." Oh! if His providence is so manifestly displayed, and His tender pity so sweetly shown forth to the rebellious and the vilest, let those who know Him, love and trust Him more; and let all who hear the sound thereof, turn to Him and live!

(To be continued.)

FLOWERS, AND "SUNNY MEMORIES."

THERE are few subjects on which the gifted mind of the Author of "Uncle Tom's Cabin" shines forth more beautifully, or for which she evinces a tenderer and more exquisite sensibility, than for flowers. On looking forth from the bed-room window of the house to which she had been taken after landing in this country, her eye rested on the ivy clad porch, with shrubs of prickly holly, and a robin perched on the topmost spray of one of them—"Ah!" she rejoicingly exclaimed, "this is really England." In her walk through the pleasure-grounds of the mansion after breakfast, the Daisies, Primroses, Bluebells, and the yellow blossoms of the Furze, highly delighted her; she commented upon each, remarking that none of them graced the landscape of New England.

The straggling hedgerows with their many-tinted banks, and the ditches on the roadsides in which the wild-flowers nestled, were contrasted with their own stone-walls. "I remember reading," she observes, "in stories, about children trying to crawl through a gap in the hedge to get at flowers, and tumbling into a ditch on the other side, and now I saw exactly how they could do it."

Travelling myself one day with an American gentleman and his lady in this country, he remarked to me, "There is nothing with which I am so much delighted in England as with the majestic and graceful outline of your trees,—your hedgerow enclosures—your snug farm-houses—your gentlemen's seats, and antique churches." And on my telling him that the steeple or belfry ends of the latter all pointed to the west, he was astonished, anxiously enquired the reason, and kept a sharp look out for every one which we subsequently passed.

But to return to our author, had she not been caught up by the whirlwind of fashion and opulence, we might have had many sketches from her pen on the subject of our English flora; as it was, in Scotland, that land of sight-seeing and hospitality, the rich and varied foliage of its romantic glens, the park-like scenes, the Yew, the Heather, and, above all, the deep green, and velvety texture of the grass-lawns, and the exotics in the conservatories of the nobility, all enchanted her. "So far as I have observed," she continues, "the culture of flowers, both in England and Scotland, is more universally an object of attention than with us. Every family in easy circumstances seems, as a matter of course,

to have their greenhouse, and the flowers are brought to a degree of perfection which I have never seen at home." Flowers may justly be deemed the enchantresses of the soul, for they awaken delight with their inexplicable excellencies, without our being able to define the hidden sources from whence the pleasure springs. Ladies enjoy flowers best, for they have a sort of poetical appreciation of their beauties; while gentlemen have only a prosaic one. Doctor Johnson considered a snuff-box to be the best passport to a Scotchman's heart—but flowers are a more universal key to confidence and conversation. Mungo Park, during his almost death-struggle in the African desert, was excited to one more effort by the sight of a little green moss; his confidence renewed itself in the Being who could thus foster so diminutive an object in such a place.

My neighbour, with his well-kept grounds, whose mind usually dwells on more serious and nobler objects, recreates himself by cultivating the *Primula* tribe of plants; of which he has a choice variety around his pond, in his dell, and along the margin of his shrubbery walks. His wife, with perhaps more taste, is fond of pet flowers, raising of new ones from seed, and occasionally blossoms out herself in the form of an interesting article for some gardening Magazine. Flowers delight and instruct us, and commend themselves by their cheering influence to all minds. God is no Utilitarian; He adorns what He creates, and dispenses beauty with a liberal hand.

In one sunny spot, amid the snow on Mont St. Barnard, our author gathered eighteen different kinds of flowers; showing how these children of nature make their resting-places bright for the homage of the traveller's heart. The clefts, valleys, and lower parts of the Alps were enamelled with flowers. "I know not" she says, "why the old buildings and walls in Europe have this vivacious habit of shooting out little flowery ejaculations and soliloquies at every turn. One sees it along through France and Switzerland, everywhere; but never, that I can remember, in America." A fact which owes its solution to our moister climate. "These flowers seem to me to be earth's raptures and aspirations; her better moments, her lucid intervals. Like everything else in our existence, they are mysterious. In what mood of mind were they conceived by the Great Artist? Of what feelings of his are they the expression, springing up out of these gigantic, waste, and desolate regions, where one would think that the sense of his Almighty might overpower the soul! Born in the track of the glacier and the avalanche, they seem to say to us, that this Almighty Being is very pitiful, and of tender compassion; that in Him there is an exquisite tenderness and love of the beautiful; and that if we would be blessed, His will to bless is infinite. The greatest men have always thought much of flowers. Luther kept a flower in a glass on his writing table; and when he was waging his great public controversy with Echiüs, he held a flower in his hand. Lord Bacon has a beautiful passage about flowers. As to Shakspeare, he is a perfect garden; he is full of flowers; they spring and blossom, and wave in every cleft of his mind."

On returning through France, she remarked, "The life of Paris, indeed of the continent, is floral, to an extent to which the people of the United States can form no conception. Flowers are a part of all their lives. The churches are dressed with flowers, and on fête days are fragrant with them. A jardinière forms a part of the furniture of every parlour; a jardinière is a receptacle made in various fanciful forms for holding pots of flowers. These pots are bought at the daily flower-market for a trifle, in full bloom and high condition; they are placed in the jardinière, the spaces around them being filled with sand and covered with moss. Again, there are little hanging baskets suspended from the ceilings and filled with flowers. These things give a fanciful and festive air to apartments."

"Poetry, like truth" says Ebenezer Elliott, "is a common flower; God has sown it over the earth like daisies sprinkled with tears, or glowing in the sun, even as He places the crocus and the March frosts together, and beautifully mingles life and death:—"

Your voiceless lips, O flowers, are living preachers,—
Each cup a pulpit, and each leaf a book,
Supplying to my fancy numerous teachers
From loneliest nook.

Floral Apostles, that in dewy splendour
Weep without woe, and blush without a crime:
Oh may I deeply learn and ne'er surrender
Your love sublime.

Were I, O God, in churchless lands remaining
Far from all voice of teachers and divines,
My soul would find in flowers of thy ordaining,
Priests, sermons, shrines.

—S. P., *Rushmere*.

CROP FROM POTATOES LATE-PLANTED.

My Potatoes having been much frost bitten in the end of April last, and expecting but a poor return from them in consequence, I was induced, as an experiment, to try what would be the result of late planting, which I saw, from an article in one of your numbers of last year, had been successful, though so late as in the month of July; or it was, at least, stated, I forget which, that a crop of Potatoes might be expected from July's planting. Accordingly, I had a vacant patch of ground in my garden, situated in the county of Somerset, prepared, lightly manured, and planted on the 22nd of last June with what are called *Scotch Reds*, the only Potato I could procure so late in the season fit for seed. They came up well, but were attacked in the end of July by the same blight as had attacked early Potatoes everywhere else, and has prevailed everywhere for years past. On the 7th of August, a fresh attack of blight again appeared, but still very slight, which was also the case in the first instance; so slight, indeed, that I cherished the hope that the tuber would not be affected. On the first of October, and after the Potatoes had been in bloom for some time, blight again appeared, so that now there was every expectation that the loss would be as extensive as among the other crops of Potatoes. On the 4th November the crop was dug up, after waiting for some time for the decaying of the haulm, but which was not quite complete at even this late period; and the produce was found as good as the early-planted Potatoes, and in quantity also, with not more disease in the tubers than in the other crops which, in this neighbourhood, was comparatively trifling this year.—SENEC.

JASMINUM NUDIFLORUM.

(THE NAKED FLOWERING JASMINE.)

This plant appears to have been introduced to this country from China, by Mr. Fortune, to the Horticultural Society of London, in the year 1844, and, as a Christmas-flowering plant for either pot-culture, or upon the open wall, it rivals all the plants with which I am acquainted. It is a hardy perennial, that can easily be every-body's plant. Its habit of growth is much the same as that of the common White Sweet-scented Jasmine (*Jasminum officinale*), and therefore suitable for training upon walls. Of course, for pot-culture, the object, in most cases, is to have a dwarf, compact, bushy plant, which is readily obtained by cutting back, removing, or topping any strong or runaway shoots during the summer, and encouraging the growth of as much of the small spray shoots as possible. These spray shoots produce two blossoms from every joint, or the axils of the leaves, forming quite a wreath, which all fall off some time before the blooming season. Not a bit of this small spray should be cut in until the plants have done flowering, when it may be shortened-in in common with other shoots.

This very showy plant forms a Christmas gem, from its gaudy, golden-yellow-coloured blossoms, which are nearly an inch-and-a-half across, and produced in profusion at a season when flowers are so scarce from natural sources. December and January are the natural season of its flowering.

It is a hardy plant, and readily increased, either from young tips of the shoots of spring or summer growth, in the common dung hotbed, or by cutting the young, long shoots into certain lengths, and planting them in some cool border, in November, as one would a common Gooseberry, or a Currant, so that the cottager can make an increase of this charming plant, without either greenhouse or hotbed, and

may delight himself with a plant of it trained up outside of his castle window.

I have this very ornamental plant in both the before-mentioned forms, and in both cases it is so strikingly beautiful, that I feel too much cannot be said in its praise.—T. W.

COMPONENTS OF HERACLEUM GIGANTEUM.

"ARE you aware, or can you, or any of your correspondents, inform me, if there is any thing peculiar in the chemical composition of this plant, or if any use can be made of it when dying down in the autumn?"

"Observing that the stalks of my plants were much frequented by wasps and flies, and particularly where there were fractures of the branches or bark, I conjectured that the stalks might contain sugar, so I cut up one of the largest of them in small pieces, and boiled it, afterwards straining off and evaporating the water. I found the dry residuum to be so very *deliquescent*, that in a few minutes after exposure to the air, it was again a liquid, and on tasting it I found it to be some kind of salt, or, at all events, of a very saline nature.

"I have now some of the ashes of the plants by me, which I intend to treat with alcohol, &c., but should like first to have your opinion on it.—T. M. W."

[We are not aware of any analysis of the *Heracleum*. It is not improbable that its sap may contain sugar, for it is abundant in one of its nearest relatives in the same Natural Order—the Parsnip. We fear that you will not obtain any satisfactory results from treating the ashes of the *Heracleum* with alcohol. Alcohol is chiefly employed to dissolve the resinous constituents of a plant, and when you reduce it to ashes by burning, the resin is destroyed.

The following is Dr. Richardson's analysis of the ashes of the Parsnip:—

Potash	36.12
Soda	3.11
Lime	11.43
Magnesia	9.94
Phosphate of Iron	3.71
Chloride of Sodium (Common Salt)	5.54
Phosphoric Acid	18.66
Sulphuric Acid	6.50
Silica	4.10
Oxide of Manganese .....	.89
	<hr/> 100.00

The amount of Potash and Common Salt are, probably, quite as great in the *Heracleum*, and would fully account for the saline flavour, and for the absorption of moisture from the air.]

RAISING GERANIUM UNIQUE FROM PORTIONS OF THE ROOT.

MR. BEATON'S remarks upon Root-propagation reminds me of a fact which I noticed this autumn, and which I think might be useful to some of your readers, as it relates to a plant which is somewhat difficult to strike by cuttings of the shoots. In taking up some plants to preserve through the winter, I came upon a Geranium (*Rollisson's Unique*), from the roots of which were growing several young shoots. They proceeded from the upper parts of the roots, at about two inches from the stem, and when detached from the parent made very nice little plants; and it strikes me that propagation by root-cuttings will be an effectual means of increasing this very desirable bedding-plant.

In a recent number of THE COTTAGE GARDENER, Mr. Beaton made some remarks upon Tree-planting, and dwelt upon the necessity of laying the roots out straight, and the folly of rocking the tree to-and-fro, as practised by our forefathers. Now, without contradicting Mr. Beaton (whose opinion, backed by his long experience, is undoubtedly correct), I cannot help mentioning a fact which proves that

trees will *sometimes* grow in spite of all the rough usage bestowed upon them. When I was an apprentice, some three years ago, I was sent, with another man, to plant a Yew-tree, about six feet in height, the branches of which were distributed with great regularity, and I became possessed with a strong desire to convert this tree into a walking-stick; so I shook it all manner of ways, till every root must have been doubled up, and every particle of the original soil shaken from the fibres; but still the tree grew, and, in spite of all its maltreatment, did far better than many which were planted with every care imaginable.—B. BINCOFF.

A SHORT RECEIPT FOR A POTATO PUDDING.

Mrs. MUDLAW, we premise, is the cook of Mrs. Philpot, wife of the candidate for Congress, and Mrs. Darling is the wife of a worthy mechanic, whose vote Colonel Philpot is ambitious to obtain. Mrs. Darling calls upon Mrs. Philpot, and the latter introduces her to Mrs. Mudlaw, her cook, when the following conversation takes place.

"Miss Philpot says you want to get my receipt for potato pudden."

"Yes," replied Mrs. Darling, "I would be obliged to you for the directions," and she took out of her pocket a pencil and paper to write it down.

"Well, 'tis an excellent pudden," said Mudlaw, complacently; "for my part, I like it about as well as any pudden I make, and that's saying a good deal I can tell you, for I understand making a great variety. 'Taint so awful rich as some, to be sure. Now there's the Cardenelle pudden, and the Washington pudden, and the Lay Fayette pudden, and the—"

"Yes, Mr. Darling liked it very much; how do you make it?"

"Wal, I peel my potatoes and bile 'em in fair water. I always let the water bile before I put 'em in. Some folks let their potatoes lie and sog in the water ever so long before it biles; but I think it spiles 'em. I always make it a pint to have the water bile—"

"How many potatoes?"

"Wal, I always take about as many potatoes as I think I shall want. I'm generally governed by the size of the pudden I want to make. If it's a large pudden, why I take quite a number, but if it's a small one, why then I don't take as many. As quick as there's done, I take 'em up and mash 'em as fine as I can get 'em. I'm always very particular about *that*, some folks aint, they'll let their potatoes be full o' lumps. I never do. If there's anything I hate, it's a lump in potatoes. I *won't* have 'em. Whether I'm mashin potatoes for puddens or vegetable use, I mash it till there aint the size of a lump in it. If I can't git it fine without sifting, why, I *sift* it. Once in a while, when I'm otherways engaged, I set the girl to mash on't. Wal, she'll give it three or four jams, and come along, 'Miss Mudlaw, is the potato fine enough?' Jupiter Rammin! that's the time I come as near getting mad as I ever allow myself to come, for I make it a pint never to have lumps—"

"Yes, I know it is very important. What next?"

"Wal, then I put in my butter; in winter time I melt it a little, not enough to make it ily, but jest so's to soften it."

"How much butter does it require?"

"Wal, I always take butter accordin to the size of the pudden; a large pudden needs a good size lump o' butter, but not too much. And I'm always particular to have my butter fresh and sweet. Some folks think its no matter what sort of butter they use for cookin, but I don't. Of all things I do despise strong, frowy, rancid butter. For pity's sake have your butter fresh."

"How much butter did you say?"

"Wal, that depends, as I said before, on what size pudden you want to make. And another thing that regulates the quantity of butter I use, is the 'mount o' cream I take. I always put in more or less cream; when I have abundance o' cream I always puts in considerable, and when it's scarce, why I use more butter than I otherwise should. But you must be particular not to get in too much cream. There's a groat deal in havin jest the right quantity; and so 'tis with

all the ingreijences. There aint a better pudden in the world than a potato pudden when its made *right*, but taint everybody that makes 'em right. I remember when I lived in Tucker town, I was a visitin to squire Humphrey's one time, I went in the first company in Tuckertown—dear me! this is a changeable world. Wal, they had what they call a potato pudden for dinner. Good laud! Of all the puddens! I've often occurred to that pudden since, and wondered what the squire's wife was a thinkin of when she made it. I wa'nt obleged to do such things in them days, and didn't know how to do anything as well as I do now. Necessity's the mother of invention. Experience is the best teacher after all—"

"Do you sweeten it?"

"O yes, to be sure, it needs sugar, best o' sugar, too; not the wet, soggy, brown sugar. Some folks never think o' usin good sugar to cook with, but, for my part, I won't have no other—"

"How much sugar do you take?"

"Wal, that depends altogether on whether you calculate to have some saas for it, some like saas, you know, and then some agin don't. So, when I calculate for saas, I don't take so much sugar; and when I don't calculate for saas, I make it sweet enough to eat without saas. Poor Mr. Mudlaw was a great hand for pudden saas. I always made it for him, good, rich saas, too. I could afford to have things rich before he was unfortunate in business." (Mudlaw went to state's prison for horse stealing.) "I like saas myself, too, and the curnel and the children are all great saas hands; so I generally calculate for saas, though Miss Philpot prefers the pudden without saas, and perhaps *you'd* prefer it without. If so, you must put in sugar accordingly. I always make it a pint to have 'em sweet enough when they're to be eat without saas."

"And don't you use eggs?"

"Certainly, eggs is one o' the principal ingreijences."

"How many does it require?"

"Wal, when eggs is plenty, I always use plenty; and when they're scarce, I can do with less, though I'd rather have 'enough; and be sure to beat them well. It does distress me the way som folks beat eggs. I always want to have 'em thoroughly beat for everything I use 'em in. It tries my patience most awfully to have anybody round me that won't beat eggs enough. A spell ago we had a darkey to help in the kitchen. One day I was makin sponge cake, and, havin occasion to go up stairs after something, I sot her to beateen the eggs. Wal, what do you think the critter done? Why, she whisked 'em round a few times, and turned 'em right into the other ingreijences that I'd got weighen out. When I come back and saw what she'd done, my gracious! I came as nigh to losin my temper as ever I allow myself to come. 'Twas awful provokin! I always want the kitchen help to do things as I want to have 'em done. But I never saw a darkey yet that ever done anythin right. They're a lazy slaughtering set. To think o' her spilin that cake so, when I'd told her over and over again that I always made it a pint to have my eggs thoroughly beat!"

"Yes, it was too bad. Do you use fruit in the pudding?"

"Wal, that's just as you please. You'd better be governed by your own judgment as to that. Some like currents and some like raisins, and than agin some don't like nary one. If you use raisins, for pity's sake pick out the stuns. It's awful to have a body's teeth come grindin on a raisin stum. I'd rather have my ears boxed at any time."

"How many raisins must I take?"

"Wal, not too many, it's apt to make the pudden heavy, you know; and when it's heavy it aint so light and good. I'm a great hand—"

"Yes. What do you use for flavouring?"

"There agin you'll have to exercise your own judgment. Some like one thing, and some another, you know. If you go the hull figger on temperance, why some other kind o' flavourin 'll do as well as wine or brandy, I 'spose. But, whatever you make up your mind to use, be particular to git in a sufficiency, or else your pudden 'll be flat. I always make it a pint—"

"How long must it bake?"

"There's the great thing, after all. The bakin's the main pint. A potato pudden, of all puddens, has got to be

baked jest right. For if it bakes a little too much, it's apt to dry up, and then agin if it don't bake quite enough, it's sure to taste potatery, and that spiles it, you know."

"How long should you think?"

"Wal, that depends a good deal on the heat of your oven. If you have a very hot oven, 'twon't do to leave it in too long, and if your oven ain't so very hot, why you'll be necessitated to leave it in longer."

"Well, how can I tell anything about it?"

"Why, I always let 'em bake till I think they're done, that's the safest way. I make it a pint to have 'em baked exactly right. It's very important in all kinds o' bakin—cakes, pies, bread, puddens, and everything, to have 'em baked precisely long enough, and jest right. Some folks don't seem to have no system at all about their bakin. One time they'll burn their bread to a crisp, and then again it'll be so slack 'taint fit to eat. Nothin hurts my feelins so much as to see things over-done or slack-baked. Here only t'other day, Lorry, the gal that Miss Philpot dismissed yesterday, came within an ace o' lettin my bread burn up. My back was turned a minit, and what should she do but go to stuffin wood into the stove at the awfulest rate. If I hadn't found it out jest when I did, my bread would have been sp'ilt as sure as I'm a living woman. Jupiter Rammin! I was about as much decomposed as I ever allow myself to get! I told Miss Philpot I wouldn't stand it no longer, either Lorry or me must walk."

"So you've no rule about making this pudding?"

"No rule," said Mudlaw, with a look of intense surprise.

"Yes," said Mrs. Darling, "you seem to have no rule for anything about it."

"No rule!" screamed the indignant cook, starting up, while her red face grew ten times redder, and her little black eyes snapped with rage. "No rules!" and she planted herself in front of Mrs. Darling, erecting her fleshy figure to its full height of majestic dmpiness, and extending the forefinger of her right hand till it reached an alarming propinquity to the lady's nose. "No rules! do you tell me I've no rules! Me! that's cooked in the first families for fifteen years, and always gin satisfaction, to be told by such as you that I haint no rules!"

Thus far had Mudlaw proceeded, and I know not what length she would have "allowed herself to go," had not the sudden entrance of Colonel Philpot interrupted her. He being a person of whom she stood somewhat in awe, particularly just at this time, she broke off in the midst of her tirade, and, casting a look of ineffable disgust at Mrs. Darling, retreated to her own dominions to vent her wrath upon poor Peggy, who had done everything wrong during her absence.—(*Americans at Home.*)

FUMIGATING WITH TOBACCO.

I HAVE never found that there is such a secret in the art of fumigating; for with me it is, and has been since 1849, one of the most simple of operations. Since 1848 I have done away with the barbarous practice (for I and another apprentice were once nearly half-killed smoking Tobacco and Capsicum) of sitting and blowing away at the touch-hole of a garden-pot for nearly an hour together; and in place thereof I use an old sieve, much in the same way as one of your correspondents of December. For pits and frames I use another apparatus. I picked up a little old fryingpan, which had done its work at frying stakes and collops, and in its bottom I made a few holes: in this I put a few live coals, and on this my Tobacco-paper, *previously wetted*, to prevent its burning fast, and scorching my plants. In smoking a Cucumber-frame, or the like, I open the front, and turn the branches on one side; I then place my fryingpan on anything to raise it above the foliage. The smoke goes to the back of the frame before it touches the leaves, and in this way I never get a plant burnt.

Can you give me any information of a plant whose name is pronounced *Bukneria pedunculata*, an old dwarf-bedding plant, rather tender? Not knowing its degree of hardiness, and supposing it would winter with Verbenas, I have lost it; and should be glad to obtain it, either in the way of purchase or present.—I. R.

[The plant you mention is now better known as *Mandula pedunculata*, though some botanists give it the same specific name, but include it in the genus *Lyperia*. It is a native of the Cape of Good Hope. Can any of our readers inform us where it can be procured?—Ed. C. G.]

QUERIES AND ANSWERS.

GARDENING.

STARTING VINES.—VINES FOR A HOUSE UNHEATED.

"I planted a Vinery last spring with the following sorts:—Black Prince, Mill Hill, Black Hamburg, Black Barossa, White Sweet Water, and Royal Muscat.

"The young Vines made from fifteen to twenty feet of growth last summer. They are planted *inside* the house. The border they are planted in is three feet deep, and well drained.

"Will you please tell me what time I should start the Vines into growth this season, and how much I should cut them back? Ought I to let them bear any fruit the coming season?"

"I have another house to plant in the spring, fifteen feet long and ten feet wide. I have no means of giving heat. The house was built merely to cover an unsightly wall. Will you please tell me the best sorts to plant for a late crop? The border is *inside* the house.—A CONSTANT SUBSCRIBER."

[We would recommend starting the Vines about the end of February, so as to be able to start earlier next year, if you wish it. If ultimate, rather than present, gratification is your object, we would advise cutting the Vines back to within a foot or so of the base of the root, and taking merely a solitary bunch this season, and that not a large one.

The house which you cannot heat we would confine to Black Hamburg, West's St. Peter's, Barbarossa, one or two, and White and Royal Muscadine, and, perhaps, a plant of the Nice and the Syrian.]

INVESTMENT OF SAVINGS.

"Would Mr. Appleby have the goodness to inform a 'YOUNG GARDENER' where he could safely invest a few pounds yearly, so that it might be of service to him in his old age, as Mr. Beaton has done?"

"No doubt many a young gardener would put by a yearly amount, if he knew where to put it where it would be safe.

"Please to give us a few hints on this subject in THE COTTAGE GARDENER.

"Does Mr. Appleby know anything of the Bank of Deposit, No. 3, Pall Mall East, London? If so, does he consider it a safe one? Many thanks for his excellent advice. I feel satisfied that it will arouse many a young gardener, and cause him to make some provision for 'the evening of his days.'"

[We very willingly publish the above letter, and to find that Mr. Appleby's advice is valued and acted upon by the writer. For the further information of the writer, and others acting with such laudable prudence, we can confidently recommend the National Savings Banks for the deposits of the savings of young as well as of aged gardeners.

Any sum, however small, and up to £50, may be deposited, but not to exceed that sum in one year. As soon as the sum saved, with interest added, amounts to £100, the managers will, with the consent of the depositor, invest it in the Government securities, but the depositor must attend on the dividend days to receive the interest.

We know nothing of the Bank of Deposit mentioned, but if we did, still we should prefer the Savings Bank. There is scarcely any risk to a depositor there; and though the interest is low, yet it is safe, and is added to the principal every year, without further trouble to the depositor. There have been losses in a very few instances from the

villany of the Secretaries, but they are so rare, and recent Acts of Parliament have so effectually guarded the depositors, that there can be no place so safe for small accumulations as the Saving's Bank. It is better than the best privato institution that was ever devised.]

PLANTS FOR A VINERY.

"I have a small greenhouse Vinery twenty feet by twelve; Cucumber-pit and potting-house below, the latter principally, both, for summer use. Tho greenhouse is a lean-to, with the flue running along the back, and hot-water pipes, of four-inch bore, along the east end and south side, with open troughs; thus leaving only one end, the west, without heating medium. There is a pit in the middle, round which runs hot-water channelling, supplied from a branch immediately as the hot-water enters the house, and available by stop-cock at pleasure, in which I am growing Mushrooms well. The top of the pit is covered with moveable straw hurdles, and above are moveable shelves, elevated just sufficiently to be out of the way, on which are stored greenhouse plants. At the front of the house, the window-frames can be taken off at pleasure, and hung within to the distance of twelve inches, so as to leave an outside shelf covered (that is, when hung within) by the eaves only, where the Vines now lay snug. I am no draughtsman, or I would give you a plan. All I want to say is, I have two vacant spaces, one at the western end between the door and flue, another at the eastern end between the end window and flue, on which I wish two climbers to travel, or trees to grow. What will suit? The spaces are not very large, but they look too bare. It is my intention to remove all plants save the Vines at ripening time, and two or three potted Peach-trees placed on a back shelf over the flue, which I hope to be able to manage from hints obtained through THE COTTAGE GARDENER. The trees, or climbers, whichever advised, will have to be placed in boxes made for the purpose, and by the side of heat, placed at the east end, will be a cistern of water resting on the flues, immediately as it (the flue) enters the house; which cistern is not intended to interfere with the space destined for the tree advised.—TROUBLESOME."

[We should liked to have known the depth and height of the places referred to, and whether you preferred fruit or flowers. Suppose the latter, *Acacia armata* would be a fine feature at the west end, and an Orange. A *Cactus speciosissimus*, *Hoya carnosa*, or, if not too hot, a *Mandevilla suavis* at the other end. A Passion-flower would also do well at either end, such as *P. coccinea* at the west end; and *P. Colvillii* or *P. edulis* at the east end. If the latter, you might have a lot of egg-sized fruit, if you liked them, and many people do.

We would, if possible, move your Peach-trees out of the house as the Grapes coloured, and place them against a south fence while the frosty nights threatened, and then house them.]

SOWING PASSIFLORA CÆRULEA SEED— DUNG VERSUS GUANO.

"A friend of mine has given me a little seed from the *Passiflora cærulea*, and as I am desirous to raise a few plants, would you be kind enough to give me a hint as to the culture?"

"Could I use in my garden 'guano' in preference to 'horse-dung?' as I can get the former more readily, and it does not cause so much mess. By your attention to this you will greatly oblige.—JNO. VICARY, JUN."

[Your questions will meet every necessary attention, as town gardeners we wish especially to oblige. The great use of dung in most garden ground is, that it acts as a physical improver of the soil, as well as a fertiliser. Guano is, no doubt, one of our best manures. For gardens it is generally best given in the shape of waterings, in the proportion of half-an-ounce to the gallon. If you use it in mixture with sand or soil, be careful not to over do it. Even for agriculture, three cwt. per acre is thought about sufficient. If you have such a thing as a hotbed, or expect to have one in the course of three months, delay sowing your *Passiflora* seed till then. Place it for eight or ten hours previously in

water about 90°, then sow in light, sandy earth, and plunge the pot in the hotbed. When two or three inches high, pot the plants off separately, and place them in the bed; harden them after a week by giving more air, and by-and-by place them in a window or greenhouse, protecting them through the winter, for the first year or two. If no hotbed, wait until April, soak the seed, sow as advised, cover the pot with a square of glass, and keep the pot not far from the fire-place until the plants are up, but taking them to the window afterwards.]

GROWING MUSHROOMS IN A STABLE.

"Would you have the kindness to inform me, through your periodical, if it is possible and advisable to attempt, without stove or flue, to grow Mushrooms in a loose box, or stable, which is seventeen feet long, and seven wide, and is under a granary. It is one of a range of buildings which surrounds the stable-yard on all sides except on the south. We have several times tried to grow Mushrooms, but ineffectually. Last year we put some spawn bricks in the Cucumber-frame, but only got two or three out of the whole bed. I have forgotten to tell you that we are situated on the Yorkshire Wolds (chalk), near 500 feet above the sea. Our gardener is a lad who this last year has lived in the house, and having only lived previously with a market-gardener in this country he has never seen Mushrooms grown.—L. S. G."

[No doubt as to the Mushrooms; the great proportion of that oesulent is produced under less favourable circumstances. We have had them nearly every day in the year out-of-doors. Of course, in winter, covering thickly was required; and that covering, to keep up the necessary warmth in winter, you would require in a stable. If there are several horses in the stable less heat will be required. We hardly think you will get Mushrooms in such a place from June to October, because it will be too warm. In the other months there will be no difficulty, more especially if you divide the seventeen feet into two or three divisions, and make them up in successions. The best materials are horse-droppings dried so as not to heat violently; but we use these chiefly for a top covering. Such half-decayed, dryish, caky dung as you will frequently find in linings of hotbeds are invaluable for Mushroom-beds, especially with a casing of droppings. The spawn runs best in dryish material. When we have been obliged to use rather moist material we have wrapped each piece of spawn into a handful of dry litter before inserting it. For a good bed, in such a place, the bed should be from one-and-a-half to three feet in thickness, well shaken, well beat, and firmly put together. The less violently it heats the better. If it does so, bore holes in the bed to allow the heat to escape, and beat firmly again as it declines. When the heat is from 80° to 90°, insert pieces of spawn about the size of a Walnut, at nine inches apart all over, and beat again. In a day or two, if the heat is declining, put half-an-inch of droppings all over the bed; and then, if no sign of over-heating, cover with an inch-and-a-half of soil; beat that as firm as a brick, if you can; water the surface, and make it as smooth as a wall. If in a few days you find the heat is rather declining, cover with an inch or two of hay. When the spawn begins to work the temperature of the bed will be raised. After the first pin-head Mushroom makes its appearance regulate the covering according to the weather, so that the surface-soil of the bed shall be about 55° to 60° in temperature. In very severe weather, a few barrowloads of hot dung laid down in the box would be serviceable.]

SEEDLING CINERARIAS DYING OFF.

"I have several plants of seedling Cinerarias in bloom, and some advancing to flower. Last week, to my dire astonishment, a nice plant in full flower died off, first one branch stem of blooms faded, then another; and so on, until the whole went away; and on cutting the flower-stalk off, I found it diseased with a kind of rot—I fancy it must be, as it was a dark colour. The plant is not dead; but three or four stalks that were growing up from the bottom and showing flower are looking well; besides this, one or two more new plants are going off in a slightly different manner; the blooms, instead of opening, die off, and go black, while other bunches of bloom on the same flower-stalk look well,

and bid fair to open. Can you tell the cause of these things?—J. G."

[This frequently takes place from a warm, confined, moist atmosphere. Whenever you observe the least signs of the canker, or whatever it is called, daub the part with lime and charcoal dust. Two or three neglects in watering will cause some of the flower-buds to do as you represent.]

GROWING ONIONS FOR MARKET.

"I purpose sowing an acre of Onions this season, and I should feel obliged if you would inform me what quantity of seed per acre will be necessary, and the width of the drills one from another; also, if there be any machine by which the work may be more expeditiously performed than by the thumb and finger.—AN OLD SUBSCRIBER FROM THE FIRST."

[We think that we found an ounce to every rood was sufficient for sowing Onions on a large scale. We sowed in drills six inches apart, and delivered the seed from a pint glass bottle with a quill through the cork. It is an excellent and cheap drilling-machine for most small seeds. We sowed in beds four feet wide; and gave a top-dressing of soot. The last week in February is the best sowing time.]

MISTLETOE AS THE FOOD OF ANIMALS.— WALNUT SHAVINGS FOR HEN'S NESTS.

"Can you inform me whether there is any truth in the statement that cows in calf are injured by eating Mistletoe? and whether it does injury to other animals, such as pigs, calves, and sheep? I have been told, also, that Walnut shavings are useful to make into nests for sitting hens, because they protect them from fleas. This I believe to be true.—T. RICHARDSON."

[We do not think that there is any truth in the belief that the Mistletoe is injurious to the cow. It is quite certain that it is nourishing to pigs, being boiled and given to them in the southern orchard districts. Can any reader inform us whether the cow has been *known* to eat the Mistletoe; and if so, what were the results?]

HOW LONDON IS SUPPLIED WITH MEAT, POULTRY, VEGETABLES, AND MILK.

(Continued from page 326.)

THE continued extension of London is, however, rapidly encroaching upon all the old market-gardens, and they are obliged to move farther afield; thus high cultivation, like a green fairy-ring, is gradually widening and enlarging its circle round the metropolis. The coarser kinds of vegetables are but sparingly grown in these valuable grounds, but come up in large quantities from all parts of the country; and some of the choice kinds are reared far away in Devonshire and Cornwall, where they are favoured by the climate. It would be interesting to get an authentic statement of the acreage dedicated to fruit and vegetables for the London market, but we find the information unattainable. Mr. Cut-hill calculates that there are 200 acres employed around the metropolis in the growth of strawberries, and five acres planted as mushroom-beds. Cucumbers were once very largely cultivated. He has seen as many as fourteen acres under hand-glasses in a single domain, and has known 200,000 gherkins cut in a morning for the pickle-merchants. Strangely enough, they have refused to grow well around London ever since the outbreak of the potato disease. The disastrous epidemic of 1849, we have little doubt, had much to do with the diminished supply, for the cholera soon brought about the result desired by Mrs. Gamp, "when cowcumbers is three for twopence," prices quite explanatory of the indisposition of the land to produce them. The very high state of cultivation in the metropolitan market-gardens necessitates the employment of a large amount of labour; as it is supposed that no less than 35,000 persons are engaged in the service of filling the vegetable and dessert-dishes of the metropolis. This estimate leaves out those in the provinces and on the Continent, which would, we doubt not, nearly double the calculation, and show a

troop of men and women as large as the allied army now acting in the East. There are five marts in London devoted to the sale of fruit—Covent-Garden, Spitalfields, the Borough, Farringdon, and Portman-markets—besides a vast number of street offsets, such as Clare-market, in which hawkers generally stand with their barrows. Covent-Garden is not only their type, but it does nearly as much business as all of them put together, and for that reason we shall dwell upon it to the exclusion of the others.

At the first dawn of morning in the midst of squalid London, sweet country odours greet the early-riser, and cool orchards and green strawberry slopes seem ever present to the mind.

"Bright volumes of vapour through Lothbury glide,
And a river flows on through the vale of Cheapside."

If those who seek pleasure in gaiety have never visited the market in its primo, let them journey thither some summer morning, and note how fresh will seem the air, and how full of life the people, after the languid waltz in Grosvenor-square. The central alley of the "Garden," as it is called by the costermongers, is one of the prettiest lounges in town; and, whether by chance or design, it forms a complete march of the seasons. At the western entrance the visitor is greeted with the breath of flowers; and there they show in smiling banks piled upon the stalls, or sorted with frilled edges into ladies' bouquets. As he proceeds, he comes upon the more delicate spring vegetables—pink shafts of the oriental-looking rhubarb, delicate eos lettuce, &c.; still further along the arcade, the plate-glass windows on either side display delicate fruits, done up in dainty boxes, and set off with tinted paper shreds. Behind these windows might be seen those rarities which it is the pride of the London market-gardeners to provide, and in producing which they all endeavour to steal the longest march upon time—a sieve-full of early potatoes, each as small and as costly as the egg of a Cochin-China fowl—a basin full of peas, at a guinea a pint—a cucumber marked 5s., and strawberries 18s. the ounce.

The market-gardeners of Penzance are beginning to send up many of these early vegetables, the mildness of the south-western extremity of Cornwall giving them a wonderful advantage over every other part of the kingdom. Gentlemen's gardeners also contribute somewhat, by sending to the salesmen such of the produce of their glazed houses as is not consumed in the family, and receive articles in return of which they happen to have an insufficient quantity themselves. These forced vegetables give way, it is true, as the season advances; but when in, they are always most to be found at that end of the walk nearest the rising sun. As the year proceeds, the lustier and more natural fruits are displayed—peaches that have ripened with blushing cheek to the wind, gigantic strawberries, raspberries, nectarines, or blooming plums. Feathery pines add their mellow hue; and when these fail, the colour deepens into amber piles of oranges, amber filberts, and the rich brown of Spanish chesnuts, the produce of the waning year.

To leave, however, our fancied procession of the seasons, and to return to the actual business of the market. As early as two o'clock in the morning, a person looking down the dip of Piccadilly will perceive the first influx of the daily supply of vegetables and fruit to Covent-Garden market: waggons of cabbages, built up and regularly faced, with the art rather of the mason than the market-gardener; light spring-vans fragrant with strawberries; and milk-white loads of turnips which slowly roll along the great western road, and bring the produce of the fertile alluvial shores of the Thames to the great West End mart. The pedestrian proceeding along the southern and eastern roads sees the like stream of vegetable food quietly converging to the same spot. From this hour, especially upon a Saturday morning, until nine o'clock, the scene at the market itself is of the most exciting description.

Without some organisation it would be impossible to receive and display to the advantage of the buyer and seller the varied products that in the grey of the morning pour into so limited a space. Accordingly, different portions of it are dedicated to distinct classes of vegetables and fruits. The finest of the delicate soft fruit, such as strawberries, peaches, &c., are lodged, as we have mentioned, in the central alley of the market—the inmost leaf of the rose. On the large covered space to the north of this central alley is

the wholesale fruit-station, fragrant with apples, pears, green-gages, or whatever is in season. The southern open space is dedicated to cabbages and other vegetables; and the extreme south front is wholly occupied by potato-salesmen. Around the whole quadrangle, during a busy morning, there is a party-coloured fringe of waggons backed in towards the central space, in which the light-green of cabbages forms the prevailing colour, interrupted here and there with the white of turnips, or the deep orange of digit-like carrots: and as the spectator watches the whole mass is gradually absorbed into the centre of the market. Meanwhile, the space dedicated to wholesale fruit sales is all alive. Columns of empty baskets, twelve feet high, seem progressing through the crowd "of their own motion." The vans have arrived from the railways, and rural England, side by side with the continent, pours in its supplies from many a sheltered mossy nook. It is very easy to discover, by a glance, which are the home-grown, which the foreign, contributions. There stand the English baskets and sieves, solid and stout as Harry the Eighth, amidst little hamper, as delicate as French ladies, and seemingly as incapable of withstanding hard usage. Yet some of these have come from Algiers, others from the south of France, with green-gages, and the majority from Normandy. France is beginning to send large quantities of peaches and nectarines, carefully packed with paper-shavings in small boxes; and even strawberries this summer have found their way here from the same quarter. The frost which occurred in the early part of the present year destroyed nearly all the fruit crops in the neighbourhood of London; and were it not for the bountiful stores which are brought from abroad, Covent-Garden would have been little better than a desert.

The repeal of the high duty upon foreign fruit has so far widened the field of supply that it can no longer be destroyed by an unusual fall of the mercury. By means of the telegraph, the steamboat, and the railroad, we annul the effects of frost, obliterate the sea, and command, at a few hours' notice, the produce of the Continent. When there is a dearth in this country the fact is immediately noticed by the great fruit dealers in the City: the telegraph forthwith conveys the information to Holland, France, and Belgium; and within forty hours steamers from one or other of these countries will be seen making towards the Downs and adjoining coasts, and in another six their cargoes, fresh plucked from the neighbourhoods of old Norman abbeys and quaint Flemish stadthouses, are blooming in Covent-Garden. Fruit that will bear delay comes up the Thames by boat, and is discharged at the wharfs near London bridge, but the major part eventually finds its way to the "Garden."

(To be continued.)

TO CORRESPONDENTS.

HOP-PLANTING (E. Hawley).—You shall have the Kent course of culture next week.

COATING OF ICE (Subscriber).—It has done no harm to hardy plants.

DORKING FOWLS (R. G.).—The tuft on some of your chicken is evidence that at some period one of their ancestors had in his or her blood a cross of the Poland variety. We cannot tell how the feathers on the breasts of the cocks should be, as we do not know what variety they are.

CANARY BIRDS.—A *Clergyman's Wife* kindly writes to say to our correspondent "Argus," that there is an excellent work, entitled "The Canary, a cage and chamber bird," by W. Kidd, price Six Shillings.

YOUNG RABBITS (T. Watts).—They should be taken from their mother when five or six weeks old, accordingly as they are strong or weakly.

OUR BACK NUMBERS (M. H. L.).—You can have them from No. 41 to 52, but not stamped; they will be Threepence each, and can be had of any bookseller. Any one wishing for back numbers had better complete their sets, for they are rapidly becoming scarce, and will not be reprinted. Your other questions next week.

BIRMINGHAM FANCY RABBIT CLUB.—The Secretary is—"Mr. Joseph Lawrance, junior, at Messrs. Bulliwants, Button Manufacturers, Great Charles Street, Birmingham."

NEW ROCHELLE BLACKBERRY.—"In *Chambers's Journal*, No. 40, for November, mention is made of a *New Rochelle Blackberry*, which

has been cultivated for some years with success in America. It is spoken of as being very prolific, of good flavour, and the berries in size resembling Greengages; seventy-two berries filling a quart. Is anything known of it in this country; if so, where could seeds or plants be obtained?" We shall be glad of a reply to this.

FLOWER-GARDEN PLAN (Beatrice).—The garden is very well laid out, but the flower-beds have been set down at random in the circular flower-garden, therefore, the planting cannot be done on any regular plan, and one plan of planting it will be as good as any other. We would plant the centre bed, No. 1, with perpetual Roses, and 5, 6, 9, 10, and 12, with American plants, such as the best kinds of Rhododendrons, Andromedas, Vacciniums, Heaths, Pernetias, and the like, and the beds which border the walk, 2, 3, 4, 7, 8, and 11, with mixed flowers, and we would turf over bed 13, as being entirely out of joint. The position of the beds on the sloping lawn is the best for that style, and this position ought to have determined the shape of the beds, but advantage has not been taken of the rule. The two corner beds next the house, Verbenas, or Geraniums; the middle pair to be of yellow Calceolarias, or Enocheras, and the two farthest corners the best purple or rose Petunias; then No. 2 should be best white Petunia, or white something after that; no one can go wrong, as there is no system in the plan. The aspect for both the greenhouses is good. A man who understood such things might alter all the beds in one week, so as to make this garden one of the prettiest of that class in the "West Riding."

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Advertisements.

UNEQUALLED NEW MELON, GOLDEN DROP GREEN FLESH.

EDWARD TILEY having purchased the whole of Messrs. Wood and Son's stock of Seeds of the above-named Melon, can with confidence recommend it to all growers of that splendid fruit. It has been thoroughly proved by an eminent Melon grower, and declared by all who have seen and tasted it to be one of the finest-flavoured Melons yet grown. It is a very beautiful colour when ripe, skin very thin, flesh firm and solid, and of a most superior melting and delicious flavour. Free setter and prolific bearer. It possesses a great advantage over others in its exceedingly handsome appearance when placed upon a table or on the stall of a fruit salesman, and for exhibition this Melon will be the favourite.

THE KING, Superb Scarlet Flesh Melon.—This is a variety very much wanted, and which has for some time past been neglected, but is now becoming in great request; such being the case, **EDWARD TILEY** has just procured a stock of this most superb Hybrid Scarlet Flesh Melon, which he can recommend with as great confidence as those before sent out by him, and which have all given the greatest satisfaction to the public.

Each of the above varieties may be had in packets containing six seeds, 1s 6d per packet.

The following fine varieties of Melons can be highly recommended, and are all warranted true:—

The Queen	1s	Beechwood	1s
Bromham Hall	1s	Windsor Prize	1s
Incomparable	1s	Emperor	1s
Golden Ball	1s	Fleming's Hybrid Persian ..	1s
Golden Perfection	1s	Blackall's Green Flesh ..	1s
Bowood	1s	Bailey's ditto	1s
Victory of Bath	1s	Snow's Hybrid	1s
Camerton Court	1s	Gordon Castle	1s
Chichester Prize	1s		

A packet of the Golden Drop and one of the King Melon, and one packet of any other variety mentioned will be forwarded, post free, on receipt of 3s 6d in cash, or penny postage stamps.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.

TWO NEW CUCUMBERS.—SIR COLIN

CAMPBELL and GENERAL CANROBERT.—For the full description of the above two unequalled Cucumbers, and the List of **EDWARD TILEY'S** Collection of Cucumbers and Melons—which have all been thoroughly proved—see Advertisement and Cut in *The Gardeners' Chronicle* of January 13, 1855.

Sir Colin Campbell, 3s 6d per packet. General Canrobert, 3s 6d ditto.

A packet of either of the Melons mentioned in the former Advertisement will be given to the purchaser of the two above Cucumbers. A remittance in cash, or penny postage stamps, must accompany every order, and the whole or any part (as the case may be) will be immediately forwarded.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Somersetshire.

WEEKLY CALENDAR.

D	M	D W	FEBRUARY 20—26, 1855.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock at. Sun.	Day of Year.
				Barometer.	Thermo.	Wind.	Rain in Inches.						
20	TU		SHROVE TUESDAY.	30.206—29.908	52—28	W.	02	7	21	10 30	4	14 2	51
21	W		LENT BEGINS. ASH WEDNESDAY.	30.263—29.722	49—25	N.E.	—	5	23	11 52	5	13 56	52
22	TH		Sun's declinat., 10° 17' s.	30.247—29.947	47—33	S.W.	06	3	25	morn.	6	13 48	53
23	F		Small Brindle; oaks.	30.612—30.307	49—24	N.	—	1	26	1 11	7	13 40	54
24	S		ST. MATTHIAS.	30.502—30.291	47—35	S.W.	—	v1	28	2 26	8	13 32	55
25	SUN		1 SUNDAY IN LENT.	30.470—30.395	51—23	N.W.	—	57	30	3 36	9	13 22	56
26	M		Rosy Day-Moth; hedges.	30.543—30.475	50—23	N.	—	55	32	4 36	10	13 12	57

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 46.°8, and 33.2°, respectively. The greatest heat, 59°, occurred on the 24th, in 1840; and the lowest cold, 15° on the 20th, in 1852. During the period 96 days were fine, and on 100 rain fell.

THE next plant occurring alphabetically in our translation of the Scriptures is the BRAMBLE, and we will preface our notes upon this, by observing that no plants are more difficult to discriminate satisfactorily than those which are comprised in the sacred writings under the general terms of "Brambles," "Thorns," and "Briers." As an illustration, it is only necessary to observe that the translators of our version of the Bible have made use of the word Bramble three times, and in each time the original certainly referred to three different plants—we allude to the passages in *Judges* ix. 14, 15, where the original is ATAD; *Isaiah* xxxiv. 13, where the original is KEMOSH; and *Luke* vi. 44, where the original is BAROS. Nor is this the only demonstration of the uncertainty under which the translators laboured; for the name ATAD, rendered by them *Bramble* in the passage in *Judges*, is rendered by them *Thorn*, in *Psalms* lviii. 9.

We shall have occasion to notice all the other passages under the various renderings, but at present we will confine ourselves to the plant intended by the original word *Atad*, which, as we have observed, occurs twice in the Old Testament.

In the 9th chapter of *Judges*, and in the first fable of which we have a record, the name *Atad* occurs primarily. The Shechemites had rebelled against Jerubbaal, had murdered all his family but the youngest son, Jotham, and had raised to the throne Abimelech, the child of Jerubbaal's "maidservant." Jotham, before he fled from his countrymen, addressed to them the caustic fable to which we have referred. He represented them under the figure of trees, who "went forth to anoint a king over them," and who, after having applied in vain to the most esteemed of trees—the Olive, the Fig, and the Vine—were at last content to put up with the *Atad* as their monarch. "Then said all the trees unto *Atad*, Come thou and reign over us. And *Atad* said unto the trees, If, in truth, ye anoint me king over you, then come and put your trust in my shadow; and if not, let fire come out of *Atad* and devour the Cedars of Lebanon" (*Judges* ix. 14, 15).

By *Atad*, there is no doubt that Jotham intended to represent Abimelech, the usurper, for in the 19th and 20th verses, Jotham proceeds to say—"If ye have dealt truly and sincerely with Jerubbaal, and with his house this day, then rejoice ye in Abimelech, and let him rejoice in you; but if not, let fire come out from Abimelech and devour the men of Shechem."

To render the comparison of Abimelech appropriate, the *Atad* must be a common, lowly plant, to bow down to which, and to "trust in its shadow," must have been as difficult to the Cedars, as Jotham wished the Shechemites to feel that it was debasing for them to put confidence in and submit to Abimelech. The comparison also requires that the plant be thorny, and that it was used for fuel, for *Atad* is regarded by all Hebraists to signify a thorny plant, and not only does the words quoted above, "let fire come out of *Atad*," refer to its use for fuel, but in the 9th verse of the 58th *Psalms*, "before your pots can feel *Atad*," is no other than a figurative mode of saying, "before your pots can feel the heat of the fuel."

The plant which best agrees with these characteristics, and is common throughout Judea, and its neighbouring regions, is the *Paliurus aculeatus*, or Christ's Thorn. It is a bush, very thorny, and about the size of the Black-thorn or Sloe-bush. Peter Bellonius, says Gerard, "who travelled over the Holy Land, saith that this shrubby Thorn *Paliurus* groweth throughout the whole country in such abundance that it is their common fuel to burn; yea, so common with them there as our Gorse, Brakes, and Broom are here with us." Don states that it is the common Thorn of the hedges of Asia, forming a fence of a most impassable kind. The seeds are sold in the herb-shops of Constantinople, and the native *hakims*, or doctors, prescribe them in many complaints, under the name of *Xallé*. They are used also as a dye.

In strong confirmation of the opinion that the *Atad* of the Bible is the *Paliurus* of modern Botanists, we have to observe, that this *Paliurus* was known to Dioscorides, and other ancient authors, as the *Rhamnus*, and this *Rhamnus* was called by the Carthaginians, a nation near to the Holy Land, *Atadmi* which is the plural of *Atad*.

THE Anniversary Meeting of *The Entomological Society* was held on the 22d of January, when Mr. Newman, whose period of office had expired, was replaced as President by Mr. Curtis; and Mr. Edwin Shepherd was elected as joint Secretary with Mr. Douglas, in lieu of the late Mr. Wing.

Mr. Newman delivered the annual address on the state of the Society, its progress and success; the Treasurer's accounts shewing a more prosperous con-

dition than for several years past. Mr. Newman also passed in review the more important matters which had been brought under the notice of the Society during the past year, and gave a short biographical account of such Entomologists as had died during the same period.

An unanimous vote of thanks was passed to Mr. Newman for his attention to the duties of President during the two years which he had held the office, and also for his address, which was requested to be published in the Society's Transactions.

The February Meeting of the Society was held on the 5th instant, J. Curtis, Esq., F.L.S., &c., the newly-elected President, being in the Chair,—on taking which, he delivered an address, returning thanks for his election as President, and entering into a long statement as to the causes which had prevented him from joining the Society until a recent period. In doing this, he referred to unpleasant circumstances which occurred more than twenty years ago; and we are sorry to state that this portion of his address (notwithstanding it was requested to be printed) awakened bygone discords which it would have been much better to have allowed to sink into oblivion. Mr. Curtis also appointed, to act as Vice-Presidents for the ensuing year, Messrs. Westwood, Newman, and Stainton.

The Secretary read a list of the donations to the library received since the last meeting. Mr. Newman presented a beautiful drawing by Herr Pretsch, of Vienna, representing the transformations of *Saturnia Spini*, a moth closely allied to our common Emperor moth, which has been employed in spinning a fine kind of silk in a peculiar manner, namely, by confining the caterpillars in small flat cases, the inner surface of which offers no salient points to which the insect can attach its cocoon, so that it spins its thread entirely over the surface, forming a thin layer. This plan, however, appears to us to be attended with two inconveniences; first, the quantity of silk spun by this species of caterpillar is very small; and secondly, there is no means of compelling the caterpillar to deposit its threads in even layers, its irregular movements causing the texture to be of unequal thickness.

Brigadier Hearsey communicated an extract from the Journal of the Asiatic Society of Bengal (vol. vi., 1837), on the mode in which the silk of the cocoons of the Eria silk-worm (*Saturnia Cynthia*) is spun, instead of being reeled off by the natives; they being the species now attempted to be raised, with every prospect of success, in Malta and the South of Europe.

The same gentleman also exhibited several cases of very beautiful insects from Sylhet, including some of the greatest rarity; and Mr. Stevens exhibited several beautiful species of the singular Indian beetle *Cheirotonus Mac Leuii*.

Mr. Stainton exhibited some of the galls of *Cynips Quercus petioli*, from Devonshire, Mr. Curtis having doubted its occurrence in that county at a former meeting. Mr. Stainton's correspondent gave some particulars relative to the habits of the species, which is only found on the lower sprays of the Oak.

Mr. Newman read "A plea for the Cockroach," (*Blutta orientalis*), stating that it had been observed to feed upon the bed-bug; and that this habit on board ship had been recorded in Webster's Narrative of a Voyage to St. Helena, and in Forster's Voyage. Brigadier Hearsey stated, that the Cockroaches on board the vessel in which he last returned from India were so numerous, that they gnawed the nails of some of the passengers down to the quick whilst asleep.

Mr. Curtis read an Enquiry by Dr. Asa Fitch concerning a species of scale insect which infests fruit-trees to a great extent in Illinois and Wisconsin, and which appears to be identical with the *Aspidiotus conchiformis*, or *linearis*. He also stated, that the Executive Government of the State of New York, alive to the interests of Agriculture and Horticulture, had commissioned Dr. Fitch to draw up a report on the insects injurious to fruit-trees in that State. He also read a letter from M. Candeze, of Liege, requesting the loan of a species of Elateridæ for his monograph on that family, which now consists of not less than three thousand species.

Mr. Douglas read a note on *Psyche Helicinella*, one of those curious moths which reside in the larva state in moveable cases, like a miniature snail-shell, and of which the wingless female had only been observed till the past year, when a winged male, apparently of this species, was captured in the south of France.

Mr. Westwood read a paper containing descriptions of a number of new exotic species of Stag-beetles (*Lucanidæ*).

AMONG every other variety of Domestic Fowls, size, though varying in its relative value, is an important feature; but "BANTAMS" are exempt from this rule. On the contrary, indeed, the breeder here endeavours to reduce the proportions of the "Bankiva fowl," from which we may trace the origin of the breed. Another distinctive characteristic in some of the Bantam varieties is shewn in the desire to get rid of the usual formation of the tail common to the male "galli," substituting that of the female bird. But the reason for this is better justified in this instance than where a similar attempt has been made in the Hamburgh family; for an artificial standard, by which we would express the preference of our own to Nature's estimate of beauty and effect, is avowedly recognised by the breeders of the birds alluded to, viz., the Gold and Silver Laced Bantams. The natural plumage of the race has been so far deviated from, that little, if anything, remains of its normal character; it matters but little, therefore, if the tail be only considered perfect when at variance with that Nature had at first bestowed. The Sebright standard, moreover, be it right or wrong, tolerates only a bird "laced throughout." If this characteristic, therefore, be necessarily wanting in the usual normal plumage of the male bird, we must seek it elsewhere. But when it is remembered that these requisitions, a system of dwarfing, and the erasure of an important

feature of the male bird are now and have been long in force, degeneracy in every feature, their certain consequent, should not be matter of surprise. This applies, of course, in its full extent merely to the "laced" varieties. The evils of the course that has in this case been adopted are, it may be hoped, sufficiently apparent to forbid the possibility of success to those who would seek the recognition of the "henney" tail for the Ham-burgh cock.

BANTAMS may be thus classified:—

Gold-laced.

Silver-laced.

White.

Black.

Game.

Nankin.

Partridge.

Booted.

A general description of form may be applicable to all these. Beak curved, and short in proportion to the bird; head narrow; forehead rounded; eye bright; back short; breast very prominent; carriage unusually erect, the back of the neck and the tail feathers being almost in contact; body round and full; legs short and clean; wings depressed.

In respect of weight, likewise, a common remark may here suffice. Seventeen ounces for the male, and fourteen for the female bird, was the common standard when Bantams, as was the case some few years since, received almost exclusively the attention of amateurs, now shared by many other varieties. The evils of this course, however, became so apparent in the quality of the progeny, that we are speaking within bounds when an extension of three ounces to each sex is advised. If perfect birds below these weights are produced, to them let the honours be still assigned; but fault should not be found with specimens thus in excess of what has formerly been considered their proper limits.

Of the *Sebrights*, it is expected that every feather should be delicately and evenly laced with black on a clear yellow ground for the golden, and a silvery-white for the other variety; the tail is sometimes described as "tipped" with black, and many prize-birds would be thus rightly described; but we hold that "lacing," even in the tail-feathers, should be the breeder's aim, for we have seen this portion of their plumage exhibit equal perfection in this description of marking with that on any other part of their body; and such is evidently more in unison with the required features of the bird. Any running out of colour shown by a spotted body, or clouded tail, disqualifies at once; the legs to be slate-coloured; comb double, minute in the hens. The cock's tail-feathers to be rounded at their extremities; nor should he shew either the hackle or saddle-feathers of his sex.

The *White Bantam* should be a bird of exceeding symmetry of form, and not to exceed the *Sebright* weight; we certainly prefer the rose-comb and sickle tail, with bill and legs, as in the *White Dorking*, of a

pale flesh-colour. Feather-legged *White* specimens to be shown in the booted class.

Black Bantams now muster strongly at our exhibitions, where, as with *Black Shanghaes*, they must be uniformly of that colour; for the brassy winged birds, and those with golden hackle, have no business in this class, although they might appear among the "*Red-breasted*," and "*Duckwing Game*" of their family. The ear-lobe of the *Black Bantam* ought to be well-developed, and of a clear white; tail as in the *White*; legs dark slate; comb a full, deep-coloured-rose in the cock, and small and purple in the hen.

The *Game Bantams* are a class that of late, though numbering but few specimens, have combined symmetry of form and brilliancy of feather to an extent rarely witnessed in other divisions of the poultry show.

The *Blackbreasted* and *Duckwing* birds of this class are fac-similes of what we should look for in the markings of their corresponding colours among the *Game fowls*.

The *Nankin*, or common *Yellow Bantam* is, probably, the nearest approach to the original type of the family—the "*Baukiva fowl*." The male has a large proportion of red and dark chesnut on the body, with a full, black tail; while the hen is a pale orange-yellow, with a tail tipped with black, and the hackle lightly pencilled with the same colour. Combs vary, but the rose preferable. True bred specimens of these birds being by no means common, considerable deviations from the above description may consequently be expected in birds passing under this appellation.

The *Partridge Bantam* exceeds the other varieties in size. Cock's hackle yellowish-brown, saddle-feathers lightly streaked with black; tail ample and black; back and wing-coverts partridge-coloured; primary wing-feathers bay, but dusky at their extremities; under parts of the body dark drab. Hen's hackle yellow, lightly marked with black; breast and under part of the body drab, the rest partridge-coloured; legs light grey; combs rose.

Booted Bantams are of various colours, and their usual size is in excess of the weights already given. The *Creepers* and *Jumpers*; the *Chinese*, or *Tartarian Bantam*, with some others, occasionally appear in the class for any other variety, where their relative claims for superiority must rest on neatness of figure, and regularity and condition of feather;—a more particular statement of required points being, in this instance, impracticable within our allotted limits.

The *Spangled Bantam* is so rarely seen in perfect feather, that a simple allusion to the fact that they should occupy the same position with regard to the *Spangled Hamburgs* as the *Game Bantams* do to the *Game Fowl* proper, may be held sufficient for our present purpose.

DRUMSTICK ASPARAGUS.

SOME of our readers who have not gone through the toil of watching closely the sayings and doings of horti-

enture for the last seven years, or more, may wonder what is meant by the above title. Now, it so happens, that the title of "Drumstick Asparagus" was by no means coined by me. I am perfectly innocent of the point it contains. This much, however, I must say, that the term is so appropriate, that I would not seek to change it by any means.

Thus much, by way of opening a question which concerns thousands; let us come to the subject at once. I will fancy myself addressing those persons who well know that there is good Asparagus and bad Asparagus, and yet another class still—middling Asparagus. They, doubtless, have heard repeatedly that the market-gardeners about London are counted the first men in the world for big Rhubarb, fat Cabbages, very early Cos Lettuces, huge Cauliflowers, bouncing Celery, and I do not know how many more good things: all this nobody doubts. But, oh, this naughty Drumstick Asparagus! for, strange to say, the same clever heads and hands which produce these fat Cauliflowers, Lettuces, and Celery, plot and carry out this drumstick system. I will now endeavour to show how this comes to pass. All the world knows that market-gardeners understand what is termed "the breeches-pocket" argument, and, in good truth, they may well do so. When we hear of a rental of some £12 to £14 per annum, per acre, and take into consideration the wear and tear, the horse and man affair, and the labour, we need not wonder that they should strain every nerve to not only make things meet, but also to endeavour to enjoy the fruit of their labours.

But I do think that one portion of the public is more to blame than these Asparagus-manufacturers. I fear there is a host of persons in our great towns who, in making their fortunes, like to rise up to a higher standard like other classes of society; and in doing so misconceive the right point in things. If such persons admire, through a false taste, white Asparagus, neatly tied and trimmed, to natural Asparagus, why there will be sure to be supply. It is a pretty well established maxim, I believe, amongst our commercial classes, that where there is a demand there will be a supply. I do not for a moment believe that a great market-gardener, who had invited a country cousin or two to dinner, would cut his whitest Drumstick Asparagus for the occasion. My firm belief is, that he would rather cut from his young and rising beds that fat and green-looking material, which is so tender, that you may, in a hungry mood, swallow the whole length. Whilst the public patronise white Asparagus, they will assuredly be in danger of encountering "Drumstick Asparagus;" so that, to begin at the beginning, the public taste must be changed.

I will now endeavour to show why long and white Asparagus ought to be tough, and, I fear, ever must be so tough. Those who have noticed the differing habits of Asparagus, soiled and unsoiled, will readily call to mind this fact, that the unsoiled springs perhaps a fortnight earlier than that deeply soiled. Also, that the unsoiled is green from the moment it emerges from the soil. Another fact: if any one will do as I have done annually for a long period, taste the deepest soiled white "grass," and the unsoiled green "grass," when long enough to cut, he will at once perceive such an amount of tenderness and succulence in the green, as compared with the white, as will at once make him a common-sense Asparagus-man to his dying day.

These things I have, I confess, boldly affirmed, as I felt in duty bound to do; and if any of our market-gardeners, or any other man of sound experience, can show any misconception of these matters, let it be done. We are all, I trust, in pursuit of truth, and all liable to error. I take it for granted, that the longer the rising sprout is in coming through the soil, the more fibrous

must its parts become. Now, it is of no use quoting such things as Sea-kale, Rhubarb, &c., in this case: they may become more tender and succulent through the very same process which makes Drumstick Asparagus. If all these things, in the main, obey one general law as to their mode of development, they are not obliged to resemble each other precisely in the results of the blanching process as to texture, degree of flavour, succulence, &c. We all know that Asparagus in full stature and development, in August or September, is almost half a shrub in point of habit and strength of fibre, as compared with such blanched products as Sea-kale, &c. Surely, then, the main point on which tender and succulent Asparagus depends, must be found in averting the effects of time in its production. Quickly produced by powerful stimuli, and then the sooner eaten the better. I could easily urge other arguments which, although of a collateral character, would all tend to strengthen my point; but the readers of THE COTTAGE GARDENER, if I understand them aright, would rather purchase argument by their weight than by their length.

I must, however, before leaving the subject, beg permission of the market-gardener to try and place the matter on an equitable footing. And now, how is it, let us ask, admitting that the market-gardener is by far too intelligent not to know how to grow succulent and tender Asparagus;—how is it, I say, that such is not the case? Who has not seen the retail folks going about the streets of London with a most imposing-looking bunch of white Asparagus? so imposing, indeed, that I have allowed myself to be gammoned, and thought how fine it looked. But I have generally, after the moment of joke or hilarity of feeling has passed, repented me of such a hasty judgment, and the farce of black-lead pencils, patented, and with a host of gold letters on them, has irresistibly rushed in my head. Reader, if ever you bought, as I have done, a beautiful pencil, with an inch or so of what ought to have been purest Cumberland lead at the other end, and which in its working seemed more fitting to write on a metallic plate than in a fine lady's *billet doux*, you will know what I mean. And, by-the-by, like the Drumstick "grass," you would only be able to use an inch-and-a-half, statute measure, out of a length of nearly a foot; but there is one consolation—the other negative end of the pencil makes capital fire-wood, and the other end of the "Drumstick grass" will help to augment the muck-heap if properly conserved. The real fact is, the public like plenty for their cash; and the fault, I do conceive, lies more in an indiscriminating taste than in a desire to impose.

Let the public learn speedily to desire greenish Asparagus; and if it is of such a tint, and the bud at top has not begun to unfold at all, but is compact as a first-rate Cauliflower, they may depend that one bundle will be far more satisfactory than two; and that our gardeners will, as soon as the taste becomes general, instantly begin to put their house in order.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY, 6TH FEBRUARY.

(Concluded from page 370.)

GRAPES.—Pine-Apples and Grapes have been more freely sent up to these meetings, since I have attended them, than any other fruits for which the Society offer prizes; but I never saw half the quantity of Grapes exhibited at one meeting as we had on this occasion. The best Grape-growers in England fought it out most manfully among themselves, and others joined, whose names are not so well known in London. Mr. Ingram,

of the Royal Gardens, Windsor; Mr. Fleming, gardener to the Duke of Sutherland; Mr. Forbes, gardener to the Duke of Bedford; Mr. Jennings, gardener to the Earl of Derby, at Knowsley; Mr. Snow, gardener to Earl de Grey; Mr. McEwen, gardener to Colonel Wyndham, Petworth; Mr. Morison, gardener to A. Donaldson, Esq.; Mr. Page, gardener to W. Leaf, Esq., Park Hill, Streat-ham; Mr. Butcher, the well-known distributor of the *Barbarossa Grape*, from Stratford-on-Avon; and Mr. Clark, market-gardener, Turnmoss, near Manchester; all and severally proved, if proof were wanting, that Grapes can be kept in the highest perfection till Grapes "come again," if people will choose to go to the expense in *men and materials*. Let me be rightly understood. Men bring their value in the market like other commodities, and if you or I expect that a man for five-and-twenty shillings a week can do as much as another man at fifty-five shillings a week, we shall never reach the top of the prize-list. Yet, it is as easy as counting swallows, for a man, who spends no more than five pounds a week on his garden, to take the first prize over the heads of two more, who, each of them, may have spent fifty pounds a week, for years past, on their gardens. These ten competitors for Grapes proved, also, that the *Barbarossa*, the *Black St. Peter's*, and the *Black Hamburgh* will all keep equally well till Grapes "come again." They proved, likewise, that the *Muscat of Alexandria* has nine chances to one against its keeping quite so long. But, on the other hand, they afforded a proof in which few Grape-growers would believe, which is, that the common *White Muscadine* can be kept till the middle of February. Mr. McEwen, not he of Arundel Castle, but an older acquaintance of mine, at Petworth, sent a bunch of this *White Muscadine*, another of some early Black Grape; both had the berries as much shrivelled almost as raisins, yet every footstalk was as sound as they were last September. Here, then, is a rule to go to market with,—never buy a bunch of Grapes again without looking if the footstalks of the berries are sound, and not shrivelled; or if they are dried up, that they are of the same colour as the big stalks, or stalks which hold the bunch together; if they are black or brown, it is what we call "shanked," and the berries of a shanked bunch are next to poison. They would not kill a gardener, it is true, else I should have been dead years ago; but no one who is at all of a delicate constitution should taste a berry from a bunch that is shanked.

Mr. Forbes, at Woburn Abbey, has now established his claims to the high distinction of being the best Grape-grower in England. He is the only one among us who brings out his last year's Grapes and the first Grapes of this season together; and if they were put into the same dish, I am quite sure there are Grape-dealers, in Covent Garden, who could not tell the *Black Hamburghs* of 1854 from those of 1855, as they were staged by Mr. Forbes on the 6th instant. Mr. John Richardson, one of my pupils at Shrubland Park, is Mr. Forbes's foreman, and I am looking for a first-rate situation for him. I have been requested to do so by Mr. Forbes himself, with whom I have been acquainted for many years, and with his father before him. Of course, Mr. Forbes took the first prize with late Grapes, and I think Mr. Clark took the second prize with the *Muscat of Alexandria*, which was, indeed, most beautifully kept. He is a market-gardener, at Turnmoss, Manchester, and this is the first time, I think, I have booked him. Few things give me more pleasure than to welcome a new comer with the proper marks about him, and the next best thing I like is to hear from himself the story of his success. Mr. Fleming, Mr. Snow, Mr. Butcher, and Mr. Morison, exhibited with the *Barbarossa Grape*. The rest, not yet specified, were either *Black Hamburghs* or *Black St. Peters*, and there was not a second-rate

berry in the lots. The Judges must have put their wits to work to decide the shades of difference, such is the perfection to which this branch is now carried in high quarters. Mr. Morison is also new to my notes, and a welcome visitor.

PINE-APPLES.—Here, again, the best Pine-growers in the country contested; Mr. Ingram, Mr. Fleming, Mr. Dodds, gardener to Colonel Baker, Salisbury; Mr. James, gardener, Pontypool Park, Monmouthshire; Mr. McEwen, gardener to the Duke of Norfolk; and Mr. Bailey, gardener, Shardloes Park, Bucks, being exhibitors. All their Pines appeared to me to be on the average of first-class fruit at this early season, and all of them were small crowned. Mr. Fleming took the first prize with one of the *Smooth-leaved Cayenne*, with a very small crown, and weighing 4 lbs.; the other was a new Pine to us, in London, a very handsome fruit, looking like a well-filled-out Montserrat Pine; it was 4 lbs. 4 oz., and was called *Charlotte Rothschild*. Another Pine, to match, of the same kind, was sent by Mr. Dodds, from Salisbury, being 4 lbs. 3 oz.; and like a man whose head is put on the right way, Mr. Dodds sent a note about this *Charlotte Rothschild* Pine, to say that he had grown it for several years; that he finds it to fruit and swell off equally well in winter and in summer; and that he highly recommends it. I have not seen Mr. Dodds since the 14th of May, 1831; but I always take heed what information he sends up to the Society. Mr. Bailey's Pine was very conical, red-looking, and with a crown no bigger than a robin's head; but there was no name to it, and I did not know the sort. The rest were *Queens* and *Ripley Queens*.

PEARS.—There was an extraordinary competition with Pears, but there being so many things to talk about, we had no regular lecture, properly so called, but the man at the helm observed, that no one could believe that this was a scarce year for Apples and Pears, judging from what were before us. I always considered that *Ne Plus Meuris* was our best and most legitimate Pear for February; yet, with the exception of one dish of *Ne Plus Meuris*, we had only the last of the January Pears instead. I should tremble to send up a dish of *Glout Moreau* to a fashionable party in February, but there were several good dishes of it there; also of the *Easter Beurré*, and *Winter Nelis*, with *Passe Colmar*, *Knight's Monarch*, *Winter Crassane*, and *Chaumontelle*. Mr. Tillyard, gardener to the Right Hon. the Speaker, at Heckfield, took the first prize in Pears, with *Glout Moreau*, *Easter Beurré*, and *Ne Plus Meuris*. They were splendid fruit. He had another lot, but not for competition, consisting of *Passe Colmar*, *Knight's Monarch*, the two best of all the January Pears, also *Winter Nelis*, equally good in December and January, and *Beurré Rance*, with another kind, called *Susette de Bavay*, which I do not know. It was early for the *Beurré Rance*, but one never knows the state of this Pear till it is tasted, it always looks dark brown. It was in other collections, and, no doubt, is now in season, and will last till May, as it is always the latest of the very best kinds. Mr. Snow had the second prize, for *Glout Moreau*, *Easter Beurré*, and *Chaumontelle*; and Mr. McEwen, of Arundel, took the third prize with *Passe Colmar*, *Easter Beurré*, and *Beurré Rance*. Mr. Robertson, gardener to Lady Emily Foley, Stoke Edith Park, near Ledbury, Herefordshire, had the best-looking *Chaumontelle* Pears I have seen for a long time; also the *Easter Beurré* and *Glout Moreau*. I know Stoke Edith Park, and I should take it to be as liable to spring frost as any place in the county, but it has been long noted for good fruit, inside and out, and Mr. Robertson seems the very man to keep up the name. There is, or was, a tree of the *Tulip Apple* in that garden, which used to bear the finest-looking Apples in Herefordshire, or, indeed, in all England, except, perhaps, the *Beauty*

of Kent, which I consider the best-looking Apple we have. Mr. Bloore, another new name, gardener to the Rev. J. J. Hornby, somewhere in Lancashire, sent beautiful samples of *Glout Moreceau*, *Winter Crassane*, and *Beurré Rance*, which were highly commended, as they deserved.

APPLES.—They were not so plentiful, there being but two collections; but my own favourite Apple, the *Court Pendu Plat*, was in each of them. I have said already, that when I lived in Herefordshire we considered this the best Apple in the county, either for cooking or the dessert. It was a rival to their Golden Pippin, and that Golden Pippin was very different from what they call the Golden Pippin about London. Mr. McEwen, of Arundel, had the first prize for Apples, and Mr. Snow the second. The former sent *Court Pendu Plat*, *Blenheim Pippin*, alias *Woodstock Pippin*, and *Blenheim Orange*, a very strong-growing tree, which bears well after it has done growing, but a shy Apple on a young tree; *Ribstone Pippin*, *Golden Noble*, a middle-sized, clear yellow Apple, from Norfolk, not often seen, but a handsome fruit at table, and better still in the hands of the cook, and *Young's Golden Pippin*, which I never tasted, or even saw or heard of, as far as I can recollect. Mr. Snow had *Court Pendu Plat*, *Golden Noble*, *Blenheim Pippin*, *Golden Harvey*, which is the *Brandy Apple*, that makes the cider so strong in Herefordshire; it is also a fit companion to the *Court Pendu Plat* at table; *Cockle Pippin*, another excellent table Apple, if the smallest and the largest of it are first laid aside; very large Apples look vulgar at table; and very small ones as if you had nothing better to offer. This *Cockle Pippin* holds on to May in a good fruit-room, and *King of the Pippins*, that is, the Apple which now goes by that title, and a most excellent Apple it is, but is not the true old one of that name. Mr. Kirk, the fruit-nurseryman, imposed on the Horticultural Society by this name, which they gave it in the *Pomological Magazine*, and sent out grafts of it by that name; but Forsyth, Lindley, and Rogers, in England, and Downing, in America, have all called it, one after the other, *Golden Winter Pearmain*, and it is exactly of the true Pearmain shapo, but all such things I must hand over to the Pomological Society. I am no authority for apple-dumplings, although I knew a good deal about Apples before I went into Herefordshire, where I was so completely fixed by hundreds of kinds, which are hardly known on this side of the Malvern Hills, that I fairly thought I should never open my mouth again about Apples, unless they were well cooked; nor should I now, to any extent, were it not for the credit of THE COTTAGE GARDENER, and to spur on the Pomological to beat me if they have a mind.

FORCED VEGETABLES.—Two years back, the Society offered to give prizes for collections of Vegetables and Salads, which were competed for very keenly by a few growers only, but now they confine the prizes to collections of six superior kinds; and in the winter, chiefly to collections of six kinds of forced vegetables. Her Majesty has been long noted for the good things from the garden, and Mr. Ingram took off the best prize at the first start. His Grace the Duke of Norfolk, through Mr. McEwen, pulled up tight to the Sovereign, and the Duchess of Sutherland, by the hands of Mr. Fleming, showed us "a bit of her mind;" that is to say, if five more dishes had been sent, with that of the Sea-kale from Trentham. We must all go back to the kitchen-garden again, and let alone flowers till we have learned afresh how to do the thing according to the times, but as luck would have it, we are spared the time and trouble. Mr. Ingram's *Asparagus* was the best ever seen in London; *Love Apples*, or *Tomatoes*, as full, fresh, and shining as they were last October; *Mushrooms*, all bonnets and buttons, and no seeing into the gills below; *Kidney*

Beans, or, as countrified people say, French Beans, as long, and sleek, and thin in the sides as in July or August; *Sea-kale* good enough for a queen, but not near so good as from Trentham. Mr. McEwen sent *Early Potatoes*, Ash-leaf; *Asparagus*, which would be considered first-rate, were it not for the Windsor ones; *Kidney Beans*, in two bundles, good, but would look better if they were laid out their full length in a flat basket—a good deal depends on how you show off a thing—*Mushrooms* and *Rhubarb*; he also sent two *Cucumbers* of the *Sion House* kind, which is the very same as what was called *Kenyon's Free Bearing*, in Liverpool, when I was there in 1832. Mr. Forest took it from Eaton Hall to Sion House, and that is why it was so named. We had, also, *Lettuces*, *Endive*, and *Mustard* and *Cress*, from Arundel.

ODDS AND ENDS.—The first in this class was a root, as much like a long, middle-sized Parsnip as two sisters; but, curious enough, the thick end is at the bottom. This is the new Yam Potato, *Dioscorea Batatas*, which, from this peculiarity of forming a thick-ended root, must be planted in newly-trenched ground, or on ground thrown up in deep ridges, according to French reports. But how do those roots lengthen so much in the wilderness? it may be asked; and all that I can answer is this: if this wild root will improve by good and suitable cultivation, like other wild roots, such as the Wild Carrot, Parsnip, and Beet, it will be of immense value, and cook easier and taste better than either of them.

Long, dry shoots of the Chinese Sugar-cane, *Holcus saccharatus*, from Mr. John Henderson, Kingskerswell, Devonshire; and a top of it in seed, like Millet seeds, from her Majesty's garden; also fibre from the stems, from Mr. Henderson, the value of which, for making paper, has been ascertained by the Society to be about £10 per ton. It is from the north of China, and will be quite hardy in this country, and the best of the race for such colonies and settlements as those of the Cape, Natal, and Australia, for making their own sugar.

A model of a moveable stage for plants, from Mr. Smith, of Hummanby Hall, near Scarborough; a handy contrivance, which would require drawings to explain it.

A new kind of cast-iron boiler for hothouses, which appeared to me to be one of the best I had seen. It was invented by Mr. Munro, gardener to Mrs. Addie. The bottom is of the "saddle" form, to catch the flame, and the body is a square box-shape, and this box is traversed from back to front by 4-inch pipes—I think, six lengths. When the boiler is full of water there will be a few inches above these pipes, and as much below them; then a square top, or lid of iron, is screwed on, the flame passes from the back end of the saddle below into these 4-inch pipes, and from them into the flue. The power thus is immense, and the thing seems easy to work, to clean out, and to answer in all respects, and should not be very dear; but without actual trial for a few months, one cannot say how far this boiler may be better than others.

Also some seedling Apples and Potatoes, and other things. There was one dish of forced Strawberries, from Mr. Brown, gardener at Waltham Abbey, Essex; very nice and well-coloured fruit of *Cuthill's Black Prince*, the easiest of all Strawberries to force; few other strawberries could be had thus early. There were four specimens or plants of *Brussels Sprouts*, all but the roots, from Mr. McEwen, to show how long and prolific he grows them at Arundel; every sprout, from top to bottom, was ready for the pot.

There were four or five large drawings hung up in the room; a full portrait of the great *Wellingtonia gigantea*, a cross section of the trunk, and a vertical section showing the size at different heights; also full portraits of an English Oak and Scotch Fir, to show the relative sizes of the three; the Oak looked just like a great Gooseberry

bush by the side of *Wellingtonia*. Other devices were to show the big tree as it is, bigger than all others. There was once a curious computation for discovering the ages of trees from their diameters, and by that, the age of this tree ought to be 3000 years; but that computation is now thrown overboard, for the most accurate is that from counting the ring formed by the annual growth; according to this latter plan, the age of the old *Wellingtonia* was 1100 instead of 3000. D. BEATON.

GROWING GRAPE-VINES AND PEACH-TREES IN THE SAME HOUSE.

"I wish to have your advice relative to a house which I am about converting into one for Peaches, Vines, &c. It has hitherto been used as a moist stove, but being about to build another, I should wish to turn the old one to good account. The situation, dimensions, &c., are as follows:—

"A lean-to house, end wall facing west, back wall facing south (it is in the corner of the garden).

"Back wall is thirteen feet high; front wall, five feet, being three of brick and two of glass. Length of house twenty-five feet; width twelve feet. The roof is fixed; front lights open. There is a wooden ventilator at the end (about half-way from the ground), three feet by two.

"It appears to me that this would not be sufficient ventilation for Peaches, &c. In summer the heat is very great.

"A brick flue goes round the house, close to the walls. This I would abolish, as it would interfere with the trees. I do not care to have the house heated, not being anxious for very early crops.

"The points upon which I want your kind advice are the following:—

- "1. How many trees could I have on the wall?
- "2. How many Vines?
- "3. Should the Vines be inside the house?
- "4. What soil, and depth of same, should be inside?
- "5. Could I have a few dwarf trees in pots along the centre?

"6. The varieties of the different trees you would recommend of Vines, Peaches, Nectarines?—AN IRISH SUBSCRIBER."

This case of our correspondent is just one of those cases in which explicit enquiries are made, and to which only a general answer can be given. There is comparatively little difficulty in managing a house set apart for a particular object; but it requires great nicety to manage a number of things in one house, and all to be done respectably. I could name at least a score of amateurs, who do what our correspondent intends, and much besides, as not content with Peaches and Grapes, they grow many plants for ornament. But restricting ourselves to Peaches and Vines, a very fair result can only be obtained by a sacrifice on one side or the other. For instance, I have had fine Peaches grown on the back wall of such a house, and on standard trees in its centre, with a heavy crop of Grapes on the rafters overhead; but extra colouring and fine flavour in the Peach were generally procured at the cost of a diminished size in the berry of the Grape, as the extra air admitted to flavour and colour the Peach acted as a stand-still to the swelling. On the other hand, when a higher temperature was required to swell and ripen the Grape, the Peaches, though they might be obtained large, were generally, though juicy enough, rather deficient in colouring and flavour. By not giving quite so much air as would give your Peaches perfection, and not quite so much heat as would swell Grapes to perfection, very good crops of a medium quality can be secured of both.

Instances frequently occur, in which both are first-rate; but these are not every-day occurrences.

The form of the house could not be improved for fruit to which little or no forcing was to be applied. Are both ends opaque? or is the eastern end glass? If so, that would help whatever was placed on the north wall. If both ends are opaque, I would recommend an *Etruge* Nectarine at one end, and a *Roman* Nectarine at the other. These do better under comparative shade than Peaches in general; and even they will do little good, if the Vines across the roof should be nearer the ends than four or five feet.

If the flue is in good order, and you contemplate no better mode of heating, I would by no means advise the removing of it as you speak of, as in all such houses, even though you allow the fruit to come almost naturally, there will be days and times when a little fire-heat would next to secure the well-being of your fruit, such as a sharp frost when the Peaches were in bloom; and dull, cold weather when the Grapes were in bloom; or dull, wet weather when the Nectarines were ripening, and when extra air, without a little heat, would stunt the berries of your Vines.

There are several modes of planting such a house without disturbing the flues at all. For instance, a broad shelf might come outwards over the flue in front, for pot-plants; a two or three-feet latticed-path between the flue and Peach-trees trained to an upright, and then a semicircular trellis, extending to within three or four feet from the back wall, and within three feet of the glass, and then about eighteen inches or so from the flue at the back. The Vines might be planted and trained with a single stem to each rafter, and then brought down to the rafter, which would always help to give a security for firm, short-jointed wood.

Again, supposing that you resolved upon having Peaches against the back wall, two or three trees, according to your fancy, would be necessary, and these should be *Noblesse*, *Royal George*, and *Violette Hative*; and these should be chosen half standards, three feet or so in height, and the trellis should proceed in a slanting position to the back wall over the top of the flue, and the stem of each tree should be laid on the three sides of a narrow wooden box, the south side being open. The wood of the box would prevent the heat of the flue at all affecting the stems. With the idea of having dwarf standards in pots in the centre of the house, three feet would be as near the ground as it would be desirable to go. In such a case, where the branches of a tree come rather near to the flue, a flat board, fixed beneath the branches horizontally, would spread the heat out into the house, and prevent one tree being much hotter than the rest. Under such an arrangement, the Vines might be planted inside the house, in the position previously recommended for Peaches. If the roots of both are to be contained inside the house, a four-inch wall had better divide the middle of the house, so that a Peach tree may be removed without injuring the Vines, and *vice versa*.

If the Vines were planted outside, they could come in at the wall-plate, be trained to the rafters, without interfering at all with the flue. In this case, the whole interior border might be appropriated to Peaches, and the Vines would have their roots wholly outside. For such a late house, it matters little whether the Vines are planted outside or inside; but if the situation of the house was so elevated as to admit of it, the Vines might be planted inside, a foot from the flue, and the roots allowed to go outside by arches underneath the flue and the front wall.

Before proceeding to the direct inquiries, allow me to say, that you will want such a ventilator in each end, and three more of equal size in the apex of the roof, where the glass joins the back-wall, or there is next to

a certainty that your Peach-blossom will be burned, or the fruit tumble down like a shower of Peas.

1. The first question, as to the trees on the walls, has been answered.

2. How many Vines? Five, if there are two opaque ends; six, if one of these ends is of glass. One of these, at the warmest end, may be the *Barbarossa*, one *West's St. Peters*, and the others divided into *Black Hamburgs* and *Royal White Muscadines*.

3. For a late house, it is of little importance whether the Vines be inside the house or not. If the border is made outside, the more the border slopes to the sun the better; and, therefore, as you have three feet of brick-work, if there was nothing else to prevent it, the greater part of the soil of your border might be above the surrounding ground. In other words, you would make your border most upon the natural surface, instead of digging out a great hole, to be afterwards filled up. For instance, you wish to have six inches of your three-foot walls above the border, which is to be ten feet wide. At that extremity of ten feet, dig out a trench of earth two-and-a-half feet deep, and then clean out the triangular piece of earth that lies between you and the three-foot depth of your wall. That done, sink a drain two feet, at least, deeper at the extremity of the border; thus securing a drain four-and-a-half feet deep. Fill this with any open rubbish you can find. Then cover the sloping bottom of your border with three inches of concrete, made by one barrow-load of loam to six or seven of gravel; work it well with a sufficiency of water, and beat and roll as soon as possible. It will dry as hard as a rock. On these strew six inches, at least, of open rubble work, such as brick-bats, flints, clinkers, sandstone, &c., and, if come-at-able, lumps of charcoal, and over this place lumpy and then finer loam. As far as possible, the borders inside of a house intended for fruit-growing should be drained in a similar manner, though, in general, it is desirable that the surface should be level instead of sloping. When it is intended to plant trees at the back and front of the house inside, it is generally best to have the drain in the centre. The position of the house and the surrounding grounds must often regulate these matters. I have often seen success effected in houses where there was no drain whatever; but that did not lessen this general desirability. In ground where an outlet could not be found, the sinking of a dumb-well has often been attended with the best results. Where the bottom is a genial sand, or open gravel, or chalk, or limestone stored with fissures, there would be no necessity for draining.

4. As to the soil. Any calcareous, rich, sandy loam will grow the Vine well, if enriched with broken bones and rotten-dung. Frequently, the natural soil is good enough; but the Vine, like other things, likes maiden loam; and, therefore, the natural soil, however good, would still be better for having some good mellow loam, such as may be obtained from the top three inches of an old pasture, or even often from the sides of the highway. A covering of turves of this kind fresh, is a good thing to place, grass downwards, over the rubble. When used for the rest of the compost, it should have been mellowed in a heap for the best part of a twelvemonth. Brick-rubbish, and pieces of charcoal, and bits of bones, independently of nourishment, keep the border open. It will be seen, according to what was previously stated, that such a border will be about twenty-one inches deep, and that will be quite deep enough, as surface-dressings can often be given.

For Peach-trees, the same depth will do, and a mellow, adhesive loam is best, with a little decayed leaf-mould, and road-drift at planting. It is best to give necessary strength afterwards, by surface applications of rotten leaves, very rotten hotbed dung, and old cow dung. In moist places the borders should be raised, as advised for

the Vines; but inside a house this will not be necessary, though drainage will be a great advantage. If there is not enough of material at once, station-planting, as so well enforced by Mr. Errington, should be resorted to, adding material as it can be obtained.

6. The plants you propose cultivating as standards inside the house, I would recommend to be of a size easily transferable to the outside, when necessary. Peaches and Nectarines, especially, after having fruited and made fair wood, would ripen it better if they were taken outside, first screened from the full force of an autumn sun, and then submitted to its influence. This would also enable you to keep the house dry when the Grapes came to maturity.

Of trees fitted for this, I might mention, *Peaches*—Acton Scott, Grosso Mignonne, and Bellegarde. *Nectarines*—Elruge, Hardwick Seedling, and Pitmaston Orange. Nectarines generally do better in such a position than Peaches. *Figs*—Brown Turkey, Pegasus, and White Marseilles.

I have seen such trees do very well in such a house, with a walk along the front, and the back part of the house raised a couple of feet or so by a border, in which the trees against the back wall were placed; while the raised part brought the plants in pots and boxes nearer to the glass. When thus grown as standards, the heads will not do much good if more than three feet from the glass, nor even then if the Vines are nearer each other than four feet. I have done well with such pots when there was due light; but if the Vines are allowed to monopolise the roof, farewell to the goodness of all fruit beneath them.

R. FISH.

SELECT GREENHOUSE ACACIAS.

(Continued from page 375.)

ACACIA LONGIFOLIA MAGNIFICA.

LEAVES long lance-shaped, broadest in the middle, rather distant on the branches. Flowers in spikes about an inch-and-a-half long, springing in opposite pairs from the axils of every leaf. Colour a primrose-yellow. This is a new plant, and worthy of general cultivation.

I visited Messrs. E. G. Henderson and Son's splendid Nursery, at St. John's Wood, lately, and saw the above Acacia. It was a fine specimen, five feet high, with hundreds of spikes of blossoms advancing in growth. It stood in a long house formerly occupied with stages. These have all been removed, and the space, which is considerable, laid out as a winter garden. A serpentine walk runs through it, which causes broad spaces alternating each other, and thus concealing the sinuous walk. The broad spaces afford room for large-headed plants, such as Camellias, Oranges, and a few very fine standard Bay-trees, the intermediate spaces being filled up with various plants (amongst which the above Acacia was one of the most striking), forming altogether, at this inclement season, a very pleasing and interesting assemblage of plants. The Acacia, I was informed, was introduced from the continent two or three years ago, but had not as yet been exhibited.

ACACIA DRUMMONDII (VARIETY).

In a long, span-roofed house, used chiefly for a young stock of New Holland plants, a variety of *A. Drummondii* was pointed out to me, and a very interesting plant it is, chiefly remarkable for its delicate, Heath-like foliage. It must be a favourite when fully grown and well-bloomed.

ACACIA CELASTRIFOLIA (CELASTRUS-LEAVED).

A noble species, with large leaves, and when a good size, well furnished, in May, with heads of golden

flowers. The finest specimen, perhaps, in Great Britain, is at Kew. I saw it three years ago, when full of flower, and a finer object was never seen. The foliage is large and very dense, and of a dark rich green, contrasting well with the rich golden-coloured flowers. Whoever has a large, roomy greenhouse, or a conservatory, should procure a plant of it. It is worthy of general cultivation. It seeds freely, but seedlings do not flower so freely as plants raised from cuttings. If cultivated in a pot, it should be grown in pure sandy loam, and kept rather underpotted, and well stopped when young, to cause it to form branches down to the pot. By this treatment its growth will be moderate, branches numerous, and flowers will be produced in greater abundance. It forms a noble conservative-plant; but I would advise, instead of planting it out, to plunge it in a large pot, which will circumscribe its great growth, and induce it to flower more freely. Such a noble plant would be a great relief to the plants usually seen at the great exhibitions in May.

ACACIA LONGISSIMA (LONGEST-LEAVED).

A few weeks ago, I saw, in a conservatory belonging to John Rhodes, Esq., at Paternewton House, near Leeds, a splendid specimen of this little-known, fine species. The leaves are about an eighth-of-an-inch wide, and fully five inches long. The branches, also, are very slender and drooping, giving the plant a truly elegant appearance in the Weeping Willow style. The specimen is seven feet high, and furnished with branches nearly down to the pot. The flowers were just showing; they are produced in bunches very numerous, and the tree, for it deserves that name, must be a fine object when in full bloom. I was told its fragrance was very powerful. Here is another fine object for the exhibition tent. This species is scarcely known about London. I question whether any of the nurseries near the Metropolis even know there is such a beautiful plant in existence; at least, I have never seen a plant of it on sale.

ACACIA TAXIFOLIA (YEW-LEAVED).

A very distinct and remarkable species, with very thorny leaves, and heads of golden-yellow flowers appearing in May. If many of the species I have attempted to describe are rapid growers, soon making large plants, this is remarkable for its slow growth. I have seen plants, five or six years old, not more than two feet high, forming a low, dense bush, almost without any stopping or training. This would be an excellent plant for the front row of a collection of fifteen or twenty stove and greenhouse plants. It is also a good plant simply to ornament the greenhouse stage of a small house. It is somewhat difficult to propagate; but young shoots, with a hardened base, will root in time, in sand, under a bell-glass, in heat. It should be potted in loam and peat, or heath-mould, in equal parts, with a liberal addition of sharp silver-sand, to keep the compost open.

ACACIA VESTITA (CLOTHED).

All the species I have enumerated have dark or light green leaves, but this species has its foliage clothed with soft, short, silky, whitish hairs, giving it quite a distinct character, and adding a pleasing variety of colour to the general foliage of the greenhouse plants. The branches are long and half-drooping, and the flowers are produced from the axils of the leaves, and are of a lemon-yellow. It is a desirable plant, and not uncommon in collections.

I have now finished my selection from this large tribe of plants. I may, possibly, when I see some other species in bloom, add to it at some future time. I think the plant-loving public will be glad to know that there are desirable species yet to add to their collections.

T. APPLEBY.

HARDY FERNS.

(Continued from page 357.)

POLYPODIUM ALPESTRE.

A FERN, found only on the mountains of Switzerland. Though that country is often visited by tourists and plant collectors, they bring home only flowering plants, such as the beautiful blue-flowered Gentian; hence the Ferns of that country are comparatively scarce, and would well repay some future collector if he would bring home a good batch, especially of the beautiful *P. alpestre*. Fronds lance-shaped, growing a foot high, bipinnate; pinnae or side-wings sharp, lance-formed, shortest near the stem; the leaves deeply cut, and oblong in shape. Seed-vessels in the middle of the leaf in one row, and round in shape. Root-stock short and creeping. Increased by division. There is a good plant of this interesting, scarce Fern at Kew. It is deciduous; that is, dies down, or loses its leaves in winter.

POLYPODIUM CALCAREUM.

Though this delicate Fern is common in some parts of Britain, it is also widely distributed over Europe, and is even plentiful in North America. The fronds grow nine inches high, are triangular in form, stand erect, the frond laying almost horizontal, with three branches; each branch is twice-cut, or doubly pinnate; leaves crenated or hollowed. Seed-vessels round, placed just within the edges of the leaves. Veins simple, or rarely forked. Root-stock rough, scaly, creeping very much; hence it is easily increased by division. It is deciduous; therefore the best time to increase it is in spring, just before the new fronds appear. I have found it in great abundance growing near rocks, in the neighbourhood of Pately Bridge, in Yorkshire, a locality rich in Ferns.

POLYPODIUM DRYOPTERIS.

This British Oak-leaved Fern is found also plentifully in all four quarters of the globe. There is no hardy Fern more lovely than this; the green is peculiarly beautiful. I can distinguish it at once by its lovely colour. It is also very easy to cultivate; all that is required is a dry, rather shady, situation, with a light soil to run in. Fronds ternate; that is, with three branches, broad and deflexed, bipinnate; leaves distant and partially crenate. Seed-vessels oblong; a rare circumstance in this genus, as now constituted. Increases very freely by division. It is, fortunately, for such a beautiful Fern, plentiful and cheap.

POLYPODIUM HEXAGONOPTERUM.

We are indebted to North America for this hardy, deciduous, handsome Fern. Fronds a foot-and-a-half high, triangular, bipinnate; with the pinnae opposite, and without stems or sessile; leaves bluntly oblong and scalloped. The whole plant is covered thinly with hairs. Seed-vessels round and placed near the margin. Root-stock creeping. Increased by division.

POLYPODIUM PHEGopteris (SUN-FERN).

A British Fern, but very hardy, being found in the northern parts of Europe, as far as Sweden and Lapland. Fronds bipinnate, nine inches high; the lower pinnae project forward and reflex; leaves entire and very narrow. Seed-vessels incline to oblong, and are placed near the margin. Root-stock scaly and creeping freely; by it the species may be easily increased.

POLYSTICHUM.

A large assemblage of Ferns, separated from *Aspidium* by M. Schott, a German botanist. The distinguishing characters of this genus consist in round seed-vessels, with round cover, and leathery, thick, spiny fronds, and a great similarity of habit. Many well-known Ferns are included in this genus. The hardy ones are

POLYSTICHUM ACROSTICHOIDES.

(ACROSTICHUM-LIKE.)

A North American Fern of great beauty. It has the advantage, also, of being evergreen; that is, the fronds do not die off in autumn. Fronds lance-shaped, two feet high, and pinnated; the leaves are narrow, with short stems, with long, spiny hairs. Seed-vessels on the upper part of the frond, where it contracts. Stems scaly. Root-stock tufted; hence it is slow to increase by division.

POLYSTICHUM ACULEATUM (THORNY Fern). su
f.)

A British Fern, and also found in every quarter of the globe. Fronds two feet high, broad, lance-shaped, bipinnate; dark green leaves, rigid and thorny, the one nearest the radius, or leaf-stem, generally the largest. Seed-vessels thickly placed on the upper part of the frond. Stems thickly covered with brown scales. Root-stock tufted. Increased by dividing large, many-tufted plants. Common on hedge banks about Farnham Beeches, in Buckinghamshire. A very handsome Fern, keeping its leaves green through the winter. Grows well on old stumps of trees in rockwork,

There are several varieties of this fine Fern, of which *P. A. lobatum* is the most distinct.

POLYSTICHUM ANGULAR (ANGULAR).

This is also a British Fern, and has been found also in some parts of Germany. Frond soft and drooping, growing two feet long. This species is easily known by its stems being very woolly or chaffy. Seed-vessels numerous. Evergreen, and increased by dividing large, many-tufted plants. It is a fine Fern, and grows well in not overshadowy woods, in leaf-mould and loam.

POLYSTICHUM LONCHITIS (HOLLY FERN).

A stiff-growing, fine species, native of Britain and some parts of Scotland, but by no means common. Fronds pinnate, a foot high, very hardy, and evergreen, narrow, lance-shaped, and of a deep green colour. Leaves short and thickly set on the frond, very thorny, like the leaves of the Holly. Stems covered with chaffy scales. Slow to increase; but sometimes a second tuft is produced on the root-stalk, which may be taken off when rooted. Found chiefly amongst rocky regions; hence it should be grown on a little hillock of stones, in peat and loam. It is one of the finest of our native Ferns, and should be in every collection.

PTERIS.

Our readers will have noticed many names of Ferns ending with *pteris*; such, for instance, as *Callipteris*, *Ceraptopteris*, *Cystopteris*, and others. The original name *Pteris* is derived from *pteron*, a wing; because the fronds have the appearance of the wings of a bird. The compound names describe different sorts of wings, as horn-winged, ostrich-winged, &c.

The genus *Pteris*, as originally formed, contained a great number of species. It is now restricted to such only as have forked veins, with the seed-vessels on their points close to the edge of the leaf. The only hardy species left in the genus is

PTERIS AQUILINA (EAGLE-LIKE FERN).

This is the very common Bracken, or Brake, that so beautifully clothes many of our wild wastes, affording shelter to all kinds of game. The question has been asked, Can this Bracken be transplanted? I say, Yes, very easily, and certainly. Take up, in early spring, the rhizomas or creeping root-stocks in quantity; dig the ground well, draw drills, and lay the long roots in thick, covering them two inches deep, and they will certainly

grow the following summer, and soon form a thick plantation; but the ground must be dry, or if not well drained to make it so, because this Fern will not thrive in such places.

T. APPLEBY.

(To be continued.)

LETTUCES.

I BELIEVE there are few people to whom a salad is not acceptable in the hot weather of summer; cool, wholesome, and refreshing, a nicely-blanchd Lettuce is at all times inviting; and, by way of commencement, we may say, that a really good Lettuce is (like many other things) not always the best looking one; a mixed dish of salad, in which the very whitest kind that can be found, is not always the most crisp and tender. On the contrary, the best kind of Lettuce we know of (the *Brown Cos*, and its varieties) can rarely ever be blanched to the whiteness that the hooded *White Cos* variety assumes; while this last-named variety falls still short of the best cabbaging kinds in that respect, so that those who will insist on having the whitest blanched Lettuce to supply their tables, must not expect to always have the best flavoured and crispest; for though the *White* and *Green Cos* varieties are, when in good order, very good Lettuces, I yet give the preference to the best varieties of *Brown Cos*, when it is in good order, and when (as is not always the case) there has been sufficient care in selecting the sort, so as to be free from coarseness, and not liable to run to seed until it has attained sufficient size to be of use.

This plant likes a rich, generous soil to grow in, and especially delights in one containing as large a preparation of animal manure as possible; the soil ought also to be deep, for though the plant may not root so low as some others, yet it suffers sooner than many where it can no longer obtain the food in abundance on which it lives. An old garden soil that has by repeated diggings and manuring become a rich, unctuous mass, suits the Lettuce best; and, as I have said, it must be deep. I need hardly add, it must not be too dry; for though, like many things else, the Lettuce will stand the winter best when planted in a dry and rather poor soil, it is certain that the produce, on such soils, in dry seasons, falls very far short of what it ought to be; and as Lettuce is in most esteem in dry seasons, it is important that the soil should be deep, and though not soddened with stagnant water, yet tolerably moist. It is easy to conjecture what sort of a soil suits them; for if we look to the districts noted for producing the best crops, we shall see that the fine alluvial soils by the sides of rivers, which have been for a long period under spade-cultivation, are the most likely to suit them; consequently, in small gardens this crop must be honoured with one of the best plots that is to be had, and not cramped under trees, or in any inferior position; and when such places are not to be had, much good will accrue from having the ground they occupy well watered with liquid-manure at certain times during their growth, for though this remedy will not entirely equal the benefits of a soil containing this and other suitable food in a natural way, yet it will, in a measure, make the ground and the crop much better than it otherwise would be. However, this will be more effectually understood by referring to some of the former chapters on soils and their peculiarities.

As it is important to obtain Lettuce as early and as good as possible, means must be taken to secure a batch of young plants as soon in the season as can be done; as soon, therefore, as the present wintry weather (for it is really so at the time I write, the 10th of February,) passes away, prepare some nice, warm, dry border, where the seed may be sown; a narrow border close to a south wall, and that well sheltered, or what would be better

still, and might be commenced with at once, "a slight hotbed" might be made, on which a little seed might be sown, sufficient to produce a few plants to come into bloom before those sown in the open air can do so. These slight hotbeds require much less attention than is generally supposed—a quantity of dung, or leaves, or both mixed, is made up into a low bed in some open, fully-exposed place—I mean fully exposed to the sun—around the top of this bed set up slabs, or boards, which secure at the corners, and the middle being filled with the requisite quantity of suitable soil, the seed may be sown, and if any odd lights be at liberty they will be of great service in protecting the seed-bed from the cold and heavy rains which may be expected, if not, mats, or some other covering, may be substituted for a time; but when the seed begins to vegetate, let it be fully exposed on all occasions when the weather is not very severe. Such rough hotbeds as those described do very well to rear early Radishes, young Cauliflower plants, or, in fact, anything wanted before it can be had in the ordinary out-door routine. Potatoes are often planted on such places, and with care in covering up at nights, come in very serviceably. But as the present purpose is confined to Lettuce, I may add, the kinds proper to sow now are the *Brown* and *White Cos*, and a few of the Cabbage kinds; while, later in the spring, the Cabbaging varieties must be more extensively sowed, as they are, in a general way, less prone to run to seed, the *Cos* varieties being difficult to preserve from that in a dry season, and on hot, gravelly soil.

Lettuces that have stood the winter must be looked to when the severe weather abates, and all decayed ones removed, and when the ground is sufficiently dry, let it be stirred a little, not that much growth may be expected yet, but in order to expose any slug or vermin to the action of the cold that may be lurking in the ground; and if any remain in the seed-bed yet, let them be planted out as soon as the weather shows sufficiently settled as to imply that all severe frosts are gone, which may be expected by the second week in March; not but that frosts will occur later, but they seldom last during the day; nevertheless, the operator will at the time know best by certain indications in the weather, which everybody assumes to be a judge of. Of course, in late, or cold districts, such duties must be deferred later than in an earlier one, but the same thing has to be done everywhere.

Whoever has seen the beautiful plots of Lettuces that are grown by the sides of the Thames, both above and below the Metropolis, will have an idea of what kind of soil they delight in, and will, consequently, be able to see how far he can imitate them. But as Lettuces are expected to form a portion of every garden, the best plot must be selected for them, for few things are more deserving of attention, and as the quality of the produce depends, in a great measure, on the quality of the food it has to live upon, and as dry gardens and dry seasons are not favourable to its obtaining such food, a copious watering now and then will be of service, adding, at the same time, some guano or other soluble substance, so that an enriching matter may enter into the composition of the soil as well as moisture; even when Nature supplies the latter, much good will arise by giving the ground a dressing with something that may be carried into it by the rains, and dry, gravelly soils are, perhaps, best dealt with in that way; a thin, porous, hungry substratum preventing their holding much in solution, consequently, their manurial wants must be supplied in small quantities and often; and Lettuce, being but a short-lived plant, is the creature of the moment, and cannot wait for those changes of weather which other plants are content to do, but hasten on to a premature end: hence the necessity of supplying them with suitable food while they are in a condition to derive

benefit by it, and by judiciously sowing, early and late, a succession may be had all the year. J. ROBSON.

HOW TO KEEP POULTRY PROFITABLY.

I HAVE been a good deal interested by reading in your paper reports of country gardening and poultry-keeping, and I send you my experiences in the latter department, that you may print them, if you think they will be of any service to your other readers.

I was one of the many persons who had their attention first turned to poultry during the Cochins mania of 1852 and 1853. About two years ago, I bought my first fowls, then knowing nothing about their habits and requirements, nor about the peculiarities of the different varieties. I was certainly not prejudiced in favour of any variety, for I hardly knew that there was more than one. I say this to show, that in my testimony, such as it is, I have no bias one way or another, except in so far as two years close, personal attendance on my poultry has taught me the advantages of one variety over its rivals.

The first birds I had were Cochins. I kept them exclusively for six months, and liked their quiet habits with each other, and their docile manner to their keeper. I found, that not having any opportunity of selling birds for stock, the produce of my fowls barely paid their expenses, and hearing, or rather reading, that Cochins were considered extravagant eaters, too frequent sitters, and of inferior quality for the table, I got some Spanish, and some Dorkings, to see whether a greater return was to be obtained from these. In each case the birds were of the purest strains. The Cochins came from Messrs. Andrews and Sturgeon. The Dorkings and Spanish from Capt. Hornby.

I have now, for eighteen months, kept these three breeds side by side, and I have no hesitation in saying that the Cochins have paid me the best; and I believe that I can show that Cochin hens will pay any amateur to keep during the winter months. While I will not assert as much of either Spanish or Dorkings at any time.

I am now thinking of the large class of persons, in middle circumstances, living near a town, with only a yard and small garden, and with everything to buy for their poultry. To these people I say, I do not believe it ever pays to rear chicken merely for home consumption, but I am sure it will pay to buy every autumn half-a-dozen Cochin pullets, to keep them well during the winter, until eggs grow cheap in the spring, then to kill them off for the table, and buy in a new stock the following Michaelmas. These pullets will be in very good condition for the table if they have been liberally fed throughout, and if they are not condemned to death when broody or moulting, and the owner will have the dead fowls to repay the cost of purchase, while the eggs they have laid will have paid for their board, and have left a small profit besides.

I will tell you what profit I have had from three pens of fowls, each containing a cock and three hens, during the last four months, from October to January, both inclusive. One pen Cochins, the other Spanish, and one Dorking. In these four months, the three Cochin hens laid 172 eggs; the three Dorkings 45 eggs; the three Spanish 50 eggs. Besides this, one Cochin hen was set and hatched a brood on the 6th of January.

I have calculated, two or three times, the cost of feeding; I find the Cochins eat rather the most, but not to any very great extent, the Dorkings the next, and the Spanish least. I found, on each trial, that 2d. per week was sufficient to cover the expense of each Cochin, while the cost of each Spanish and Dorking was not less than 1½d. per week.

Now, reckoning each Cochin to cost 2d. per week, the pen of four, in seventeen weeks, will have been an expense of 136 pence, while they have returned 172 eggs and a brood of chicken. The 172 eggs could not have been bought at a shop, even in this country place, at less than one penny an egg, on an average, during the time of experiment. Taking 136 from 172 pence, the Cochins left thirty-six pence, and a brood of newly-hatched chicken in their favour. The Dorkings at 1½d. per week cost 162

pence in seventeen weeks, and paid forty-five eggs or pence, leaving a balance against them of fifty-seven pence. The Spanish costing 102 pence, and returning fifty pence, were a loss of fifty-two pence to their owner.

This is not a fancy statement, but compiled from a book carefully kept the whole time of experiment.

I am sure the Spanish are the most productive variety in summer, but then you can buy eggs twenty-four for a shilling, and at that price no great gain can accrue to the keeper of Spanish fowls; while I have shown the fate he may look for in the winter season.

I have found the Dorkings the worst egg-producers, and the most delicate of the three kinds. I am sure that a well-fatted Dorking is supreme on the table, and a few Dorking hens should always form part of the stock of any one who rears poultry for the dead market; but as I have said, the amateur, with only his back-yard, cannot successfully compete with the farmer merely for dead poultry.

I have, moreover, noticed that the Dorking eggs are less productive of chicken, and the chicken more difficult to rear than either of the rival breeds. From fifteen Dorking eggs, last spring, I had only seven chickens, and reared four. From fifteen Spanish eggs, I had twelve chickens, and brought up ten. From fifteen Cochins eggs, I brought fifteen chicken to maturity; but two pullets died after they began to lay, apparently from apoplexy. In each of these cases the eggs were taken from pens of birds kept and treated alike. Even for table use, I think the Cochins have been condemned more than they deserve. I acknowledge the well-fatted Dorking is more shapely, and has most white meat, but I am sure a well-fed Cochins of a good breed is not unsightly, especially the pullets, while the meat they have is rich, juicy, and tender, and I do not find that my friends show any great preference for one meat over the other when both are before them.

In fine, I intend to keep my Cochins, and get rid of the other varieties. I am content to buy eggs in summer, when they are cheap, and to send to the poulterer for a special pair of fowls when I wish for an ornamental dish for a feast. I know my Cochins will provide a wholesome meal for common occasions, will furnish eggs below market price in winter, and will pay their keep all the year round, if I do not suffer them to hatch a lot of chicken to eat their heads off on purchased food.—K.

ANTS DESTROYERS OF BLOSSOMS.

In reply to your enquiry, at p. 360, whether any of your readers have met with a similar instance to that detailed by your correspondent, of the destruction of blossoms of fruit-trees by ants, I may state, that last season, the greater portion of the blossoms of several young Plum-trees was destroyed here by these industrious little pests. An old authority says of them:—"Ants injure everything that they touch; but they are particularly mischievous with regard to wall-trees; where they attack successively bud, blossom, leaf, fruit."—So that the work is not new to them.—S. H. B.

THE FRUIT AND KITCHEN-GARDEN PRODUCE AT THE LAST MEETING OF THE HORTICULTURAL SOCIETY.

My fingers often itch to scribble a few lines upon various topics discussed in THE COTTAGE GARDENER, but a market-gardener, what with being up very early to attend the market, and looking after his business at home, has very little time to write or to improve himself. However, I have managed these few lines, penned after visiting the Horticultural Society's Rooms, for the first time, on the 6th instant, where I went to see if there was any protecting material exhibited and to get information as to exhibiting my own newly-invented article. I believe that more hands than mine are at work to supply this great want,—a cheap, effective material, which, if nobody is before me, I mean to bring out.

The first thing which took my attention were the *Pears*.

Mr. Tillyard's were extraordinary, bearing the same comparison to common *Pears* as the beasts at the Baker-street Cattle Show do to common cattle. The trees have had more feeding, thinning, and attention than market-gardeners give to them. We are getting tired of fruit-culture, it is so precarious.

There were a few good *Pines*, but nothing extra. Of *Grapes* there were more, and some very good. One dish was marked *New Grapes*, and one near to it was marked *Old Grapes*, but if I am not much mistaken, there was very little difference between the age of them. They were both very plump, green in the stalk, and not at all shrivelled. Both, I think, must be called very good late *Grapes*.* Some *Muscats*, from Mr. Clark, were splendid, being the best, by far, that I have ever seen at this season. I cannot perceive the value of the *Barbarossa Grape*, as some people do. Some of the *Hamburgs* were as sound, quite as good in colour, and much better shaped bunches than the *Barbarossa*, which are, in my eyes, coarse-looking, loose-hanging, and very straggling bunches. In my judgment, *West's Black St. Peters* is the best late *Grape*.

Then I came to the forced *Vegetables*; and here I was sadly disappointed. Some of the *Sea-kale* I should have been ashamed to have sent, and could not have sold at the market. The best of it was badly forced. I could have beaten it hollow. If this is a specimen of *Kale*, as forced by our best gardeners, they have much to learn yet. The *Asparagus*, if forced from roots that had been removed, was very good, but if from roots that had not been disturbed, which I expect was the case, I think it might be easily beaten. *Mushrooms* were good, but there are better in the market; I mean heavier, and more flesh on them. Of two dishes of *French Beans*, was one bad, but the other first-rate. There were two queer *Cucumbers*, some good *Lettuces*, and forced *Rhubarb*, but beaten in the market every day for size and colour. Also, some very good *Tomatoes* for the season. The *Celery* was sound, but small. I could have sent some that would have made half-a-dozen of them, and quite as sound and white. These things convinced me that we, in many things, can beat gentlemen's gardeners by odds, and if I am well next winter, I will show them how.—A MARKET-GARDENER.

QUERIES AND ANSWERS.

GARDENING.

FORSYTHIA VIRIDISSIMA.

"CAN you tell me what yellow-flowered shrub to grow as a good successor to *Jasminum nudiflorum*? It must not be high-priced.—D. F."

[We know of none more likely to suit you than *Forsythia viridissima*. This peculiarly pale green plant, like the *Jasmine*, is a very showy, ornamental plant, for training upon the open wall, where it is an extremely free bloomer. It is as hardy as the common *Peach*. Its blossoms are of the deepest golden-yellow colour, and they are produced at the end of February and in March, when flowers are still scarce. It forms a pretty contrast for the *Cydonia japonica* and the *Cydonia japonica alba*.

Like many other soft-wooded shrubs, it roots as freely as the common *Honeysuckle*, when the ripe shoots are cut into suitable lengths, and these lengths planted out in some cool border in November.]

FIXING A SADDLE-BACKED BOILER.

"CAN you tell me how to set a saddle-backed boiler? I followed the plan as indicated in a section shown in the 'Book of the Garden,' but I have been sadly disappointed. I have had the opinion of several gardeners; they say the boiler ought to answer, but it does not.

"The boiler is twenty-two inches long, fourteen inches wide, fourteen inches deep; the furnace space of the boiler

* Our correspondent will see, in Mr. Beaton's report, that he is mistaken.—ED. C. G.

is eight inches wide, and nine-and-a-half inches high. How low should the furnace-bars be below the bottom of the boiler?

"The boiler is set with a flue round each side towards the front, when it turns into a flue over the top of the boiler, travels to the back, and then turns back in a slant up a chimney, which is perpendicular from the damper.

"I have used oven coke nuts, coal nuts, mixed and separate; gas coke and coal nuts, mixed and separate; coarse breeze and coal nuts, mixed; all is the same. I do not get heat enough in the house. The pipes take a very long while to become hot, soon cool, and are never so hot as they ought to be. In a division of the house—the dimensions of which division are, 9 feet wide, 10½ feet long, 5½ feet high in front, and 10 feet back lean-to house—I have two rows of four inch pipes round the front, back, and end; yet, with all this pipe, I cannot get the house up to more than 70°, but more generally 65°. I am told I ought to be able, in so small a space, and such a quantity of four-inch pipe, to get 90° or 100°, if I wanted it.

"The circulation is perfect, I must suppose. The flow-pipe rises one foot from the top of the boiler, then rises one inch in every nine feet to the highest point, and the return-pipe descends one inch in every nine feet until it comes to the boiler, when it drops about two feet, or say eighteen inches. The supply cistern is just over where the return-pipe drops into the boiler.

"It seems to me that the brickwork (fire-brick for the arch) catches and retains nearly all the heat.

"I cannot but think that the saddle-back boilers are very far from being perfect. They ought to be double, so that the fire, wherever it plays, heats the chamber, and the two sides of every chamber it travels through, instead of heating one side of the boiler and one side brickwork. Again, they ought to be deeper on the sides than they are; by this, I mean that the depth from the bottom of the boiler to the crown of the arch (inside) should be some inches deeper than they are now made; by this means, instead of the fuel heating two sides of brickwork, it would touch and heat the boiler itself; in fact, the boiler should literally enclose the whole of the fire. In my case, if I place the furnace-bars on a level with the bottom of the boiler, I have but nine inches or less space for fuel, and the consequence is, the draft gets choked at the back of the boiler, and much trouble and waste of heat, time, and patience and temper, are lost. If I lower the furnace-bars two, three, or four inches below the boiler, the sides of the heated fuel heat the brickwork on each side of it instead of the boiler.

"I have long desired to give you a sketch of my efforts in floriculture, under the title of 'PROGRESS OF AN AMATEUR, HIS FAILURES AND SUCCESSES,' or some similar title. I fancy it would be useful. But I find my time, day and night, fully occupied, yet I hope to find leisure to fulfil my desire, and submit it to your editorial criticism, and for the guidance of others. (We hope you will).

"I have learnt much at last, but paid for it at a greater rate than many would like to purchase experience and efficiency. I can now instruct others, but still want instruction myself, and, therefore, I ask for your friendly counsel.

"Let me now tell you something of general interest to the readers of THE COTTAGE GARDENER. Late in the autumn of last year, I had a large frame too crowded with plants; by one means and another, I soon remedied this. I desired the gardener to turn out against a back-wall, facing the west, a plant, fifteen inches high, of *Abutilon striatum*, believing that it would stand the winter without protection of any kind. I was assured by several friends, and in which opinion the gardener coincided, that the plant would die. I am happy to say that they were wrong, and I am right. The plant is *not injured* by the frost or weather. The leaves it had when planted-out were young, and it threw many others after it was planted-out; they have been nipped, and are shrivelled up to nothing, but the ripened wood is firm and untouched, the young green wood is scarcely injured. The locality where this shrub has thus been tried is Peckham, in Surrey.—G. P."

[Boilers, and everything else about gardening, are far, far from perfection. Ten to one but some amateur, like

you, will do more to work out improvements than a whole host of gardeners. We do not think there can be anything so very far wrong in your boiler, when you can easily keep up 65° and 70°, in weather such as we have lately had. As for 80° or 90°, we should rarely think of securing that temperature by fire heat alone. We think it very likely that the draught of your fire would be mended if the bars were twelve or fourteen inches, instead of nine, from the bottom of your boiler. Do not be afraid of another row of bricks for that purpose. True, they will absorb heat, but they must give it out again, and the boiler will never be cold whilst they are warm. We presume you have a strong, large, fire-clamp brick at the extreme end of your furnace, for the smaller the contraction there, the stronger will be the draught in the flues round your boiler, which, from description, seems set well enough in this respect. A good damper for the chimney should also be secured, otherwise, and even then, much heat will always escape up the chimney. No boiler has yet been obtained, set it how you will, that does not cause great waste of fuel, and, therefore, where economy is to be practised, the flue should always traverse part of the house before rising into the chimney. Where that cannot be well done, we have hit upon an expedient, in a modification of the Polmaise plans. A chamber is placed over and around the furnace and boiler, and there are two holes into this chamber from the house, the one drawing in the cold air at the bottom, and the other emitting the hot air at the top. Before we thought of this, our back sheds were frequently warmer than our houses.

From the description of the mode in which the pipes rise, and then descend, it will be advisable to have a small air-pipe fixed in each of the pipes at the highest point. A very small one, from one-quarter to half-an-inch diameter, or even less will do. The end of the pipe should be open, and several feet higher than the supply cistern. Enclosed air, in such circumstances, becomes almost as dense as a cannon ball, so far as circulation is concerned.

No doubt, it would be an advantage for the saddle-boilers to be deeper at the sides, and thus nearly dispense with bricks to stand on for the side of the furnace; but even here, especially in small boilers, we have found that the heat is so great, that the bars soon get quite clear, and the fuel *hovers* up into a cake, and if you are not frequently thumping at it the fire goes out. We do not say this would be the case in a large one.

We shall be extremely glad to hear of all your doings; in fact, just as with our best gardeners, their *mishaps* would be extremely interesting, had they the courage to tell us of them. *Abutilon* we have known to spring from the roots, but we are not aware of the tops previously passing uninjured, except against a south wall at Winchester.]

HOT-WATER TANK FOR VINERY.

"I have just erected a greenhouse against the side of my house; the aspect is south, and open to the east and west, having glass ends. The size is twenty-five feet by sixteen feet. I have five Vines planted, and wish to grow with these a good selection of greenhouse plants. I have a bed in the centre of the house, and walks around it of two feet six inches wide, a border two feet wide at the back, and stages of the same width at each end and at the front. I wish to heat it by hot-water, and should prefer the tank-system, on account of its economy, if you think it will answer.

"I propose to carry the tank round the house, and to make the top of that part of the tank which goes under the stages of plate-iron, so as to throw out a good heat; the tank at the back I would cover with slate, so as to get a better bottom-heat. I can carry a part of the chimney-flue through the house, if you think the tank will not give sufficient surface heat.—A YOUNG AMATEUR."

[We have no doubt the tank will answer well enough; but for mere bottom-heat, we hardly see how you will have much of it in a greenhouse, or how slate is to give you more of it than iron. Perhaps you have some peculiar mode of tanking; and if so, we should be glad to know the kind you propose using; what mode you adopt; and how much more economical than four-inch pipes at about one shilling per foot. You will see an article on a similar house to-day; and we shall be obliged by being informed all about the tanks, and

we will gladly answer anything about the Vines and the plants.]

WALKS MADE WITH GRAVEL AND GAS-TAR.

"Having seen various accounts in *THE COTTAGE GARDENER*, and other publications, of the great advantages of using gas-tar for gravel walks, stating especially their resistance of wet and invariable firmness, it would be very serviceable to me and many others, if you could give any actual information as to the results up to this year, especially whether the walks covered with gas-tar and fine gravel, or sand, sifted upon it, have been impervious to the frost, thaw, and rain, of last winter and spring. If so, the plan must, indeed, be invaluable; and I, for one, shall put it in execution as soon as the weather is dry and warm. But as my walks are considerable, being very wide and long, gravel expensive, and the quantity of gas-tar I should require would be large, at a cost of three-half-pence per gallon, I wish to ascertain whether it would really answer my purpose, namely; secure a constantly dry, firm walk, always free from weeds. The gravel about this part of the country is always soft in wet, and entirely breaks up after frost.—H. A. S."

[In the neighbourhood of Sheffield, almost all the public paths and walks in public and private gardens are formed with gravel, gas-tar, and asphalt, with a sprinkling on the surface of Derbyshire spar. Many of these walks have been made six, eight, or ten years ago, and are as good and perfect as at first. No frost or thaw affects them, nor weeds grow on them. The white spar gives them a marble-like appearance, and it is used merely for that purpose.]

In other parts of the country, where the carriage of the spar would be great, it might be dispensed with. Any sort of hard material, such as small broken stones, brick-ends, or gravel, with the large and small sifted out, would answer well. A sufficient heap of this should be got together, and then procure twelve gallons of gas-tar, and forty-eight pounds of asphalt. Have a large tub ready, and make the hard material thoroughly wet with the mixed tar and asphalt, and as soon as it is well saturated, lay it upon the walk (previously formed highest in the middle) two inches thick, roll it level, and then scatter a thin layer of fine material, spar, or sand (burnt clay has been used), then roll again to unite this last coat with the first one, let it lay a day or two, and then roll it. An iron roller is the best. A person who never saw a walk so formed, may, possibly, not succeed at first; but after a trial or two, the difficulty will be surmounted, and then the rest will be easy. The expense will be about one shilling per square yard. When gravel is at a distance, it will cost quite as much, and will require repairing every year; whereas, this asphalt and tar will last almost a life-time, if well done at first. Mr. Appleby forms such walks, and any further information you may require, he will give you.]

PHYSURUS ARGENTUS CULTURE.

"Will you oblige me with the treatment of the above-named plant, as regards potting, watering, &c. I have a collection of Orchids in my stove which thrive very well, except the above. I wish to grow this lovely group if possible.—A CONSTANT READER."

[This plant requires a compost of peat with all the fine soil sifted out of it, chopped bog-moss also sifted out, and leaf-mould, in equal parts. Drain the pots well, and pot the plants in early spring. After it is potted, place it on another larger pot, or a box as deep as the pot the plant is in, fill round it with green moss, covering the earth in the pot also with moss. Place it in a shady place, or make a shade for it. Keep it moderately moist, and let the heat be 70° to 75° in summer, and 5° or 10° lower in winter. It is a plant that loves shade and moisture, but the last not over the leaves. A sickly plant may be brought into health by placing a bell-glass over it till it forms fresh leaves in good, luxuriant health. The moss keeps the soil in the pot moist, without too frequent waterings. All the *Anectochilus* species, and the *Goodyera*s may be treated in a similar manner.]

RUSTIC BASKETS.

"I have two or three Rustic Baskets on my lawn: will you

please to inform me which are the best trailing plants to put in them, so as to hang down, and cover the outsides?—AN AMATEUR."

[The idea of planting them with trailing plants to hang down and cover the outside, or with climbing plants to be trained, is, unfortunately, the commonest idea of our day. Yet it is the most perfectly absurd and impracticable of all the ideas in gardening, and there are not three such covered baskets, if they are kept for flowers, in all England, Ireland, and Scotland; yet some foolish people write about these covered baskets as if they were in existence. The way, and the *only* way, to have a flower-basket covered, is to plant climbers at the bottom of it, in a ring of good soil, cut out of the grass all round it. If a climber or two, sufficiently strong to cover a basket, are planted in the soil *in the basket*, they will suck the soil so much that the other flowers are soon starved, whether such flowers be herbaceous plants or pot-plants. It seems almost equally absurd to argue such self-evident matters. Old writers have treated of some trailing plants to hang over the sides of vases, by way of contrast to the upright flowers; and some modern writers speak of summer climbers, to plant in May, along with the other plants, to train over and round the baskets and vases; but even if you take the yellow Canary *Tropaeolum*, it will only cover the basket three months in the year, and the work required to train this class, so as always to look well, is ten times more than they are worth. All the attempts of the kind which we have seen were dead failures. It was never intended by the old authors to cover vases and baskets, but to have a few trailing plants by way of contrast, and the *Moneywort* is their sample plant; but from bad to worse, the idea went on to absurdity. Our best gardeners never put a trailing-down plant now in a vase or basket; the thing is quite unpardonable: but there is no reason, for all that, why baskets should not be covered, or any other thing about a garden, if any one chooses to go to the expense. All that we want for these baskets, is, that if they are intended to be covered on the outside, that it should be done in a proper manner, and on a cheap and safe plan, instead of the way asked by our correspondent. The way to have rustic baskets covered, is to have a bed round the bottom of the basket, in imitation of a pedestal. When this is to be made, make the bed a raised one, say ten inches above the grass, and to be bordered with rustic work or with stones, then the basket to rise out of the centre of the raised bed. But where a fixed basket already stands, we seldom can make a raised bed round it, but one on the flat will do just as well, and if it is a foot wide and eighteen inches deep, it will do to plant climbers in, and some fancy plants besides. It will be ten times easier to manage this way, and will look twenty times better than scare-crowding the thing by trying impossibilities. As to the kind of climbers, that depends on the kinds of plants used in the basket; but we shall return to the subject very soon.]

STRONG-GROWING SHOW PELARGONIUMS.—

VERBENAS AND CALCEOLARIAS FOR BEDDING NEAR LONDON.

"Will you be kind enough to give me the names of twelve or twenty strong-growing show Geraniums? I mean by strong, such as *Orion*, *Virgin Queen*, *Duke of Cornwall*, &c., for it is useless to attempt to grow, two miles from London, and compassed by smoke, the weaker-growing ones; but, nevertheless, I want the *finest* kinds, such as *Ajax*, *Crusader*, *Silk-mercer*, *Exhibitor*, and *Salamander*, none of which I have, or have had opportunity to see to judge for myself.

"I also want a few *Verbenas*, of the best kinds for bedding, if you please, equally smoke-proof, and also strong growers, after the type of *Defiance* and *Emma*. Such kinds as *St. Margaret* and *Fulcan Superb* I find almost too tender.

"If not tiring your patience too much, would you give me the names of two or three bedding *Calceolarias*, likewise smoke-proof, which will get through the winter tolerably in the greenhouse, and which will be covered with bloom in summer? My soil is good, light garden mould, well drained.

"Some one, in an old number of *THE COTTAGE GARDENER*, says, *Pagoda Fuchsia* has a corolla like a soda-water bottle. If the corolla of that *Fuchsia* is blown flat from underneath

against the expanded petals, quite a novel flower may be obtained, which will remain so till it falls off.—J. M."

[For the very strongest and best show *Geraniums* buy Magnot, Basilisk, Optima, Zaria, Virginia, Topsy, Purple Perfection, Pearl, Cloth of Gold, Conspicuum, Oscellatum, Governor General, Enchantress, Carlos, Juliet, Mochana, Rowena, Ajax, Fête Noir, Andover, and Gain's Conqueror, with Turner's Petruchio, and, our word for it, you will have a score of the very best and very strongest *Geraniums* in all England. You must certainly call them *Pelargoniums*, for they are not common enough yet to be called *Geraniums*. *Verbenas*—King of Purples, or Purple King, was bred and born in London smoke, and is the best purple; Ellen is a beauty, and as strong nearly as Defiance, the colour is mulberry; Andre is a strong red purple; Lady Holland, a strong light sort; Cleopatra, a crimson; and Alba magna, a large white; Defiance is the best scarlet for London.

Calceolarius—Ajax is the strongest, a large yellow and brown. We had a fine specimen of it in November, from Mr. Pince, of Exeter, with a promise of its merits; Kentish Hero and Sultan are two good sorts; Amplexicaulis and Coe's Yellow are very good.

We do not know the "Pagoda Fuchsia." The *Duchess of Lancaster* is the best white pot Fuchsia we have seen; but there are new white ones this season which promise novelty.]

KENNEDYA RUBICUNDA AND ACACIA FALCATA.

"A Constant Reader of THE COTTAGE GARDENER would be much obliged by being informed of the names of the leaves enclosed, Nos. 1, 2, 3.

"No. 1 is a climber. Please to inform me if the spots under the leaf are blight.

"No. 2 is taken from a plant five or six feet high."

[No. 1 is a species of *Kennedya*, with Pea-shaped flowers, probably *Rubicunda*, but cannot be decided by one small leaf. The "blight" is really the dry white scale, and, for a climber, there is no remedy to cure it, except cutting down the plant to the surface of the ground, painting all the place it covered, and watching that a fresh colony of scale does not come up from the roots; and if it does, the only remedy is the entire destruction of the plant, or rather the climber. Many kinds of plants can be cured of the dry scale by first pruning off all the young wood and leaves, then casing them for awhile in clay paint.

No. 2 is the leaf of a very pretty yellow flower, which comes always in the spring—*Acacia falcata*, or one very near *falcata*; but there are some hundreds of kinds, and it is not easy to say, to a certainty, the exact kind, but we are almost sure of your plant; and we see by the leaf the place is too dry for it, or you keep it too dry at the roots. These *Acacias* require regular watering, and good loamy soil.

No. 3 may be twenty kinds of plants we know. It is a general leaf. It may be of a *Chinese Azalea*, or a Silver-tree from the Cape, or a dozen of New Holland plants. It is only the merest chance to know a plant from the small leaf, and it seems like "Love's labour lost" to send leaves only: if a flower cannot be sent, at least a small branch might.]

SUN-FLOWER SEED.

"Having seen by THE COTTAGE GARDENER, and also by the DICTIONARY, that you recommended the *Sunflower* to be cultivated in the field, I am disposed to try, say one acre. Now, what I want to know is, what particular use the oil is of; and who I should get to extract it, and make cake, for I should think that way would pay best? Any other information respecting it, and its market value, will oblige.—T. A. S."

[There are in London parties who by trade are "Seed-crushers and Oil-pressers." They would give you every information as to that part of your object. We do not know the qualities of Sunflower oil, but the same parties would probably tell you its market value. The cake, we have no doubt, would be as valuable as oil-cake for cattle fattening. The seed is very nutritious and stimulating when given to poultry. In an early volume of "The Gardeners' Magazine," we find it stated, that in Portugal the young

side-shoots are eaten seasoned with oil and salt; bread is made of the seeds, and also a sort of groats; that a useful and edible oil may be expressed from them, and that they are good for fattening poultry. The leaves of the plant form an excellent forage, especially for cows and sheep. The stems will do for props for twining or climbing plants; afterwards they make good fuel, and their ashes afford potash. In some parts of America they roast the seeds and use them as coffee.

The oil is said to be as delicate in flavour as that from the Olive, and is much used by the Russians in their cookery. Their mode of extracting the oil, we read, is to put the seeds into bags, steep them in warm water, and then to submit them to the press. The oil so expressed is said to be as sweet as butter.]

BROCOLI FOR A SUCCESSIVE SUPPLY.

"You will greatly oblige by informing me which are the best *Brocoli* for one year's supply for a small family. Also the time to sow each sort, and the time of cutting.—R. S."

[Sow *Purple Cape* and *Grauge's Early* in the second week of April and the first week of May. They will produce heads from October until the middle of December. Sow *Knight's Protecting* in the first week of April, the heads will be useable from November to the end of January. Sow *Brimstone*, or *Elletson's Mammoth* in the second week of April; the heads will be in use from February until the end of April. Sow *Brimstone* and *Spring White* in the second week of April; their heads will be ready for use during the following April and May. With the above you combine variety with succession; but it is much easier to keep up a constant succession with one variety only, the *Walcheren*, if true to name. If sown first during the first fortnight of March, and at intervals of four weeks until about the middle of June, good heads may be obtained in succession from October until the beginning of May.]

DIPLADENIA CRASSINODA DYING DOWN.

"I have a *Dipladenia crassinoda* which has died back to its roots. Will it break again? I have examined its roots, and find they are all healthy. Will the tubers make plants if they are divided and potted singly? Is it deciduous? An answer, with a few hints of its culture, will oblige.—A SUBSCRIBER."

[The plant, we suspect, has been too cold; it should not be lower than from 55° to 60°, and at that temperature, during the winter, it should be kept dry rather than wet, and a few leaves may fall. The best thing you can do is to plunge the pot, by-and-by, into a sweet bottom-heat, and if the roots, or that part called the collar is alive, shoots will be produced. When these are a few inches long repot in fresh compost, aired and warmed previously, consisting of two parts peat-earth, one of fibry loam, one of leaf-mould, and one of silver-sand and bits of charcoal; keep in a growing temperature of from 65° to 85°, and in summer a less close place will suit it. Towards the middle of September, take it back to a plant-stove, and keep it, as said above, in a heat of from 55° to 60° in winter. When starting into growth again give a moist heat, and bottom-heat will be relished.]

WHITE CAMELLIA PETALS BECOME RUSTY AT THEIR EDGES.

"As my Camellias all become tinged as the flower expands, and many of them in the bud, I hope that you can assign a cause, or throw some light upon the subject.

"The plants are grown in pots (and are perfectly healthy) in a span-roofed greenhouse. The house has been erected a year, is heated with hot-water, but only occasionally to keep out frost. They turn the same, whether the house is heated or not, and in all weathers. They do not change in a lean-to greenhouse about twenty yards from the house mentioned.—T. M."

[We have found the effect noticed produced in a span-roofed house by too much sunshine striking the buds when they were wet with drippings from the roof, and more especially if there was iron in the roof.

We think sudden changes of temperature, in such circumstances, often affect plants in span-roof houses, when they escape a flattish lean-to house; and we have little doubt that your Camellia petals have suffered by being subjected to sudden changes from the cold and dark of night, to the glare and warmth of sunshine. If they were shaded for a few hours, until the house gradually warmed up, the disfigurement would not occur probably.]

IMPROVING THE STAPLE OF A CLAY SOIL.

"I thank you for the prompt reply to my enquiry, how to improve the staple of red clay soil, which contains an excess of iron. You recommend *Black* peat; now experience, on two occasions, enables me to inform you, that the application of the under strata of peat-moss, containing too large a proportion of per oxide of iron was most injurious; almost all plants languished for two years, whilst the red or grey peat, taken from three feet of the surface, laid on to land exposed to the frost, gave vigour the first season to all plants. Our bogs are upward of twelve feet deep, gradually increasing by the yearly deposit of *Calluna vulgaris* on marl foundation. I should be obliged for your opinion, as to the value of peat-moss mixed with road-scrappings, from a mountain limestone district; in what proportions for general kitchen-garden use.—O. B."

[Your reply shows the justice of our opening remark, in our answer to you, at p. 364. If we had known that the "black peat" contained excess of iron, we should not have recommended its use. As you knew the injury arising from such use, why did you ask the question? For a clayey-soiled kitchen-garden, we should use two parts of the limestone road-scrappings to one part of peat.]

DOMESTIC.

HAY AND STRAW REQUIRED FOR A COW.

"I want to know what proportion of hay and straw would keep a cow in good milking condition (say one of from six to seven score a quarter) with plenty of Mangolds. One year I tried meal, and finding it turned to beef, and not milk, was obliged to leave it off. I do not like to see thin animals; but am sure they give most milk if the thinness is not from want of food. Hay here is too dear to give more than necessary—six pounds to six guineas a ton.—J. B. H."

[A good general rule for feeding a cow is that she requires food daily equal to one-twenty-fifth of her weight. Therefore, a cow weighing 500 lbs. would require 20 lbs. of food every day. This could not be in better proportions than 10 lbs. of mangold, 8 lbs. of hay, and 2 lbs. of straw. Your cow, however, will weigh more than 500 lbs., and the probability is that 15 lbs. of mangold, 12 lbs. of hay, and 3 lbs. of straw, will be nearer her daily ration.]

AGRICULTURAL STATISTICS OF NEW SOUTH WALES.

THE total number of acres under crop in 1844, was 128,406; in 1845, 138,237; in 1846, 151,034; in 1847, 128,598; in 1848, 123,499; in 1849, 135,806; in 1850, 144,647; in 1851, 152,057; in 1852, 130,643; in 1853, 138,052. In 1852, the quantity of grain produced was as follows: wheat, 1,194,480 bushels; maize, 554,631 bushels; barley, 80,476 bushels; oats, 22,833 bushels; rye, 2,226 bushels; millet, 92 bushels. In 1853, the quantity of grain produced was, wheat, 134,541 bushels; maize, 684,253 bushels; barley, 69,128 bushels; oats, 36,886 bushels; rye, 1,869 bushels; millet, 536 bushels. The quantity of wheat ground in 1853, over that in 1852, was 190,061 bushels; of maize, 129,622 bushels; of oats, 14,053 bushels; in other descriptions of grain there was a slight falling off in the quantity.

In 1852, the production of potatoes was 12,782 tons; and in 1853, 20,308 tons; showing an increase in the latter year of 7,536 tons. In 1852, the quantity of tobacco produced was 1978 cwt. In 1853, it was only 342 cwt.; showing a decrease of 1,636 cwt. In 1852, the quantity of hay was

20,733 tons. In 1853, it was 34,595 tons; showing an increase of 13,862 tons.

This return, showing as it does a steady and material increase, must be considered satisfactory. The increase, it is true, is not proportionate to the increase of population, but when the nature of that population is considered, and the circumstances attendant on the introduction of the great bulk of it, it will be seen at once that the productive capabilities of the immigrants who arrived during the year could scarcely have been brought into action for agricultural purposes. The production of wheat is larger than in any previous years of the colony, excepting those of 1849 and 1851, while the production of potatoes considerably exceeds that of any previous year.

The return, it is to be regretted, exhibits the almost total cessation of the cultivation of one valuable article of commerce, that of tobacco. In 1851 the production of this article amounted to 12,530 cwt.; in 1852 it was only 1,978 cwt.; in 1853 it had dwindled to 342 cwt. There is no doubt that the alteration in the tariff of the colony has been the main cause of this decrease, the duty on foreign tobacco having been very materially reduced thereby. The full amount of this reduction did not come into force until January of the present year, which accounts for the almost abandonment of the cultivation of the plant. As, however, the climate and soil of the northern districts are admirably suited to its cultivation, there is little reason to doubt that when the unnatural excitement of the labour-market subsides, tobacco will, without the assistance of protective duties, assert its value as a production of New South Wales.

It may be mentioned in connection with this return, and as in some degree explanatory of it, that the import of grain, potatoes, &c., in the year 1853, amounts to £306,319, being nearly £250,000 more than it has amounted to since the famine years of 1839 and 1840. The export of the same articles the same year amounted to £71,303.

The next return we come to, under the head of production, is that of the vineyards of the colony.

In the year 1843, the numbers of acres planted was 508—wine made, 33,915 gallons; brandy, 715 gallons. In 1844, 546 acres—50,566 gallons wine; 1018 gallons brandy. In 1845, 611 acres—54,996 gallons wine; 1433 gallons brandy. In 1846, 749 acres—52,337 gallons wine; 1383 gallons brandy. In 1847, 899 acres—54,035 gallons wine; 1402 gallons brandy. In 1848, 887 acres—97,300 gallons wine; 1163 gallons brandy. In 1849, 963 acres—95,843 gallons wine; 1266 gallons brandy. In 1850, 1069½ acres—111,085 gallons wine; and 1985 gallons brandy. In 1851, 1060½ acres, 84,843 gallons wine; 1641 gallons brandy. In 1852, 1096½ acres—92,744 gallons wine; and 1581 gallons brandy. In 1853, 962½ acres—57,491 gallons wine; and 1587 gallons brandy. The import of wine during the year 1853 was 757,256 gallons, value at £198,017, being considerably more than double the quantity imported in 1852, and nearly four times the amount of its estimated value. The quantity of Colonial wine exported was 4263 gallons, of an estimated value of £3719. The quantity of foreign wine exported was 101,793 gallons, leaving an enormous balance for home consumption.

The next return is of live stock:—In the year 1843, there were 55,739 horses, 850,160 horned cattle, 54,607 pigs, 3,452,539 sheep. In 1844, 64,093 horses, 971,559 horned cattle, 52,196 pigs, 3,743,732 sheep. In 1845, 73,014 horses, 116,420 horned cattle, 56,022 pigs, 4,409,501 sheep. In 1846, 76,726 horses, 1,140,297 horned cattle, 39,733 pigs, 4,909,819 sheep. In 1847, 90,118 horses, 1,270,706 horned cattle, 57,395 pigs, 5,673,266 sheep. In 1848, 97,400 horses, 1,366,164 horned cattle, 65,216 pigs, 6,533,542 sheep. In 1849, 105,196 horses, 1,463,651 horned cattle, 52,902 pigs, 6,781,494 sheep. In 1850, 111,458 horses, 1,374,968 horned cattle, 52,371 pigs, 7,092,209 sheep. In 1851, 116,397 horses, 1,375,257 horned cattle, 65,510 pigs, 7,396,895 sheep. In 1852, 123,404 horses, 1,495,984 horned cattle, 78,559 pigs, 7,707,917 sheep. In 1853, 139,765 horses, 1,555,228 horned cattle, 71,395 pigs, 7,929,708 sheep. This return is also exceedingly gratifying, showing as it does, that the increase in our live stock has fully kept pace with the increase of population. The return would give an average of thirty-five sheep and seven head of horned cattle to every man, woman, and child in the colony, and nearly two horses and the fourth of

a pig to every individual in the colony. These proportions, it is true, show a slight decrease in the ratio of stock to population, compared with those of last year, but it is almost insignificant.

The live stock of the colony is distributed as follows:—within the settled districts there are 96,431 horses, 468,451 horned cattle, 62,720 pigs, and 2,040,801 sheep; whilst beyond the settled districts there are 43,334 horses, 1,083,834 horned cattle, 8,675 pigs, and 5,888,907 sheep. The estimated value of the live stock exported in 1852 was £16,000; in 1853 it was £36,829. The imports in the same period were confined to sixty-eight sheep of the estimated value of £68.

Connected with the return of live stock are the returns of the products derived from it, and the first of these we come to is that of tallow and lard, made in the colony. This return extends from the year 1844, when there were 43 boiling-down establishments in the colony; 127,280 sheep, 16,891 cattle, and 388 hogs slaughtered, returning 28,901 cwt. of tallow, and 11,481 lbs. of lard. In 1845 there were 52 establishments; 85,377 sheep, 36,361 horned cattle, and 522 hogs slaughtered; 46,854 cwt. of tallow, and 25,323 lbs. of lard rendered. In 1846, 34 establishments; 33,538 sheep, 9,438 horned cattle, and 184 hogs slaughtered; 16,802 cwt. of tallow, and 7,114 lbs. of lard rendered. In 1847, 49 establishments; 128,741 sheep, 32,012 horned cattle, and 54 hogs slaughtered; 58,963 cwt. of tallow and 1680 lbs. of lard rendered. In 1848, 55 establishments; 165,701 sheep, 33,097 horned cattle, 56 hogs slaughtered; 60,842 cwt. of tallow, and 1865 lbs. of lard rendered. In 1849, 80 establishments; 393,071 sheep, 35,744 horned cattle, 252 hogs slaughtered; 85,675 cwt. of tallow, 29,629 lbs. of lard rendered. In 1850, 94 establishments; 292,416 sheep, 60,385 cattle and 45 hogs slaughtered; 128,330 cwt. of tallow, 2916 lbs. lard rendered. In 1852, 72 establishments; 269,845 sheep, 42,231 horned cattle, 25 hogs slaughtered, 88,145 cwt. and 2000 lbs. of lard rendered. In 1851, 72 establishments; 292,000 sheep, 74,194 horned cattle, and 24 hogs slaughtered; 147,947 cwt. tallow, 1200 lbs. of lard rendered. The return for 1853 is not complete, but so far as it goes, it shows 39 establishments; 96,895 sheep, 29,959 horned cattle, slaughtered; and 64,485 cwt. of tallow rendered. The quantity of sheep and cattle slaughtered, for boiling down purposes, is thus shewn to be considerably less than it was in the year 1852.

The next return we come to is the return of wool exported. In 1844, the wool exported was 9,215,944 lbs., valued at £471,300. In 1845, 10,522,921 lbs., value £612,705. In 1846, 10,072,570 lbs., value, £668,541. In 1847, 12,169,684 lbs., value, £706,313. In 1848, 12,445,048 lbs., value, £683,623. In 1849, 13,396,525 lbs., value, £663,965. In 1850, 14,270,622 lbs., value, £788,051. In 1851, 15,268,473 lbs., value, £828,302. In 1852, 11,086,974 lbs., value, £676,815. In 1853, 16,358,869 lbs., value, £999,896. It is very gratifying to find that both in quantity and value, the export of wool has exceeded very largely that of any former year.

The value of the tallow exported in 1853 was £134,708, being about £8000 under the export of the previous year.

Another return dependent on that of live stock is the export of salted and preserved meats. In the year 1853, the quantity of salted meats exported was 913 tons 16 cwt.; the quantity of bacon and hams was 2792 cwt.; of tongues, 4 tons 19 cwt.; and of preserved meats, 1694 cwt., leaving a total estimated value, £26,646, being by £12,000 the largest export of this sort of produce from the colony in one year. Of hides and leather, the export of manufactured and unmanufactured, was in 1852, estimated at £37,661; in 1853, at £41,159, showing an increase of £3500.

Another export dependent on the live stock of the colony is that of butter and cheese, but as it is difficult to ascertain from the returns what proportion of the export of these articles was the production of the colony, and what was confined to imported articles, it is safer not to include it in the list of productions.

In addition to this, we find that the manufacture of cloth and tweeds from colonial wool, in the year 1853, amounted to 146,660 yards.

From this branch of productive industry, therefore, we find that the export of live stock was valued at £36,779;

the export of tallow, to £134,708; the export of wool, to £999,896; the export of hides and leather, to £41,159; the export of salt meat, to £26,646; whilst the export of butter and cheese, of woollens the manufacture of the colony, together with horns, bones, &c., could not amount to less than £50,000. Now this would show a present income derived by the colony from its pastoral productions of £1,239,188, or at the rate of about £5 10s. to every man, woman and child in the colony.

The export of timber from the colony is also the only approximate way at which we can arrive at the extent of its production, beyond the quantity required for home consumption, which, however, at the rate building has been progressing, must be enormous, compared with our population. In 1852 the export was estimated at £17,330; in 1853, it was £82,217, from which, however, must be deducted a large number of packages of imported wooden houses. Still there is no doubt that this branch of production has been increasing very largely. The export of bark for the year 1852 was £344; in 1853 it was only £215, showing a decrease of £129.—*Sidney Morning Herald*.

HOW LONDON IS SUPPLIED WITH MEAT, POULTRY, VEGETABLES, AND MILK.

(Concluded from page 386.)

The South-Western and the South-Eastern are the two principal lines for foreign fruit; the former brings large quantities of Spanish and Portuguese produce—such as oranges, grapes, melons, nuts, &c.; the latter conveys apples, pears, strawberries, peaches, nectarines, &c., from Dover, to which place they are brought by steamers. To show how enormous is the supply from abroad, we give, on the authority of the goods-manager of the South-Eastern line, the amount brought by them in one night:—

100 tons of green peas from France.
50 „ of fruit from Kent.
10 „ of filberts from Kent.
25 „ of plums from France.
10 „ of black currants from France.

In all 195 tons; out of which 135 were from across the water. The Brighton and South Coast transmit the produce of Jersey and Dieppe—apples, pears, and plums—to the extent last year of about 300 tons. Of vegetables the Great Northern is the principal carrier: last year they brought to town the enormous quantity of 45,819 tons of potatoes, besides 1940 tons of other vegetables. The potatoes mainly proceed from the fen country. Walnuts generally come by the Antwerp boats, which sometimes carry cargoes of between 400 and 500 tons. Everybody who has travelled in the Low Countries remembers the magnificent walnut-trees which grow along the sides of the canals as commonly as elms in our own country. These eke out our scantier native stores, and help to make cosier the after-dinner chat over the glass of port. During two mornings that we visited Covent Garden we saw 613 bushel-baskets of strawberries that had just come from Honfleur, and upwards of 1000 baskets of greengages arrived from the same neighbourhood during the week. As we gazed, on one of these occasions, upon the solid walls of baskets extending down the market crowned with parapets of peach and nectarine boxes, we wondered in our own minds whether it would ever be all sold, and the wonder increased as waggon after waggon arrived, piled up as high as the second floor window of the piazza. Venturing to express this doubt to a lazy-looking man who was plaiting the strands of a whip, “Blessee, sir,” he replied, without looking up from his work, “the main part on ‘em will be at Brummagem by dinner-time.” True enough; while we had been guessing and wondering, a nimble fellow had run to the telegraph, and inquired of Birmingham, and a few distant towns, whether they were in want of certain fruits that morning. The answer being in the affirmative, the vans turned round, rattled off to the North-Western station, and in another hour the superfluity of Covent Garden was rushing on its way to fill up the deficiency of the midland counties. Thus the wire and steam, both at home and abroad, cause the supply to respond instantly to the demand, however wide apart the two principles may be working.

The strawberry trade of Covent Garden is not likely, however, at present to fall into the hands of foreigners. The London market-gardeners have long looked with justice upon this fruit as particularly their own. By the skill they have bestowed upon its culture it has advanced enormously, both in flavour and size, from the old standard "hautboy" of our fathers, and which foreigners mainly cultivate to the present day. Mr. Miatt, of Deptford, is the great grower; by judicious grafting he has produced from the old stock half-a-dozen different kinds, the most celebrated being the "British Queen," which attains a prodigious size. Large quantities of strawberries are sent to the market in light spring-vans. They are placed in 1 lb. punnets or round willow baskets, or they are carefully piled in pottles, and the process of "topping-up," as it is called, is considered quite an art in the trade. The rarest and ripest fruit, which goes direct to the pastry-cooks, is still more deftly treated. Lest it should be injured by jolting, horse is exchanged for human carriage. A procession of eight or ten stout women, carrying baskets full of of strawberry-pottles on their heads, may often be seen streaming in hot haste up Piccadilly, preceded by a man, like sheep by a bell-wether. It is probable that they have trudged all the way from Isleworth with the fruit, and as they frequently make two journeys in the day, the distance traversed is not less than twenty-six miles.

After strawberries, perhaps peas are the most important article produced by the market-gardeners. Dealers, in order to consult the convenience of hotel-keepers and such as require suddenly a large supply for the table, keep them ready for the sauceman; and not the least curious feature of Covent Garden, about mid-day, is to see a dense mass of women—generally old—seated in rows at the corners of the market, engaged in shelling them. One salesman often employs as many as 400 persons in this occupation. The major part of these auxiliaries belong to the poor-houses around; they obtain permission to go out for this purpose, and the shilling or eighteen pence a-day earned by some of the more expert is gladly exchanged for the monotonous rations of the parish. In the autumn, again, there will be a row of poor creatures, extending along the whole north side of the square, shelling walnuts, each person having two baskets, one for the nuts, and another for the shells, which are bought by the ketchup-makers. The poor flock from all parts of the town directly a job of the kind is to be had. If a fog happens in November, thousands of link-boys and men spring up with ready-made torches; if a frost occurs, hundreds of men are to be found on the Serpentine and other park waters, to sweep the ice or to put on your skates; there are in the busy part of the town half-a-dozen fellows ready of a wet day to rush simultaneously to call a cab "for your honour;" and every crossing when it grows muddy almost instantly has its man and broom. A sad comment this upon the large floating population of starving labour always to be found in the streets of London.

The busiest time at the market is about six o'clock, when the costermongers surround Covent Garden with their barrows, and hundreds of street hawkers, with their hand-baskets and trays, come for their day's supply. The same system of purchase is pursued here as at Billingsgate—the rich dealers buy largely and sell again, and the poorer eluh their means and divide the produce. The regular street vendor who keeps his barrow, drawn by a doukey or a pony, looks down with a certain contempt upon the inferior hawkers, principally Irish. They only deal in a certain class of vegetables, such as peas, young potatoes, brocoli, or cauliflowers, and have nothing to do with *mere greens*. Another class of purchasers are the little girls who vend watercresses. Such is the demand for cresses, that they are now largely cultivated for the market, the spontaneous growth proving quite inadequate to the demand. They are produced principally at "Spring Head," at Walthamstow, in Essex, and at Cookam, Shrivensham, and Farringdon, on the line of the Great Western, which brings to town no less than a ton a week of this wholesome breakfast salad. The best, however, come from Camden Town. Most people fancy that clear purling streams are necessary for their production; but the Camden Town beds are planted in an old brick-field, watered by the Fleet ditch; and though the stream at this point is comparatively pure, they owe their unusually lux-

uriant appearance to a certain admixture of sewerage. A great many hundreds of bunches are sold every morning in Covent Garden; but the largest share goes to Farringdon Market. The entire supply to the various metropolitan markets cannot be less than three tons weekly. Rhubarb is almost wholly furnished by the London market-gardeners. It was first introduced by Mr. Miatt forty years ago, who sent his two sons to the Borough market with five bunches, of which they only sold three. From this time he continued its cultivation, notwithstanding the sneers at what were called his "physic pies." As he predicted, it soon became a favourite, and now hundreds of tons weight are sold in Covent Garden in the course of the year. It would be impossible to give any precise account of the fruit and vegetable produce that is poured day by day into London; for the authorities themselves only know how many baskets arrive, not how much they contain. The railway returns give us the quantity brought from a distance, and we find that the seven lines transmit annually somewhere about 70,000 tons of vegetables and soft green fruit. This is irrespective of dried fruit, oranges, &c.—a business of itself, involving great interests and employing an immense capital, and of which we will say a few words.

The foreign-fruit-trade has its head-quarters in the city. The pedestrian who walks down Fish Street Hill would assuredly never surmise that at certain seasons a regular fruit exhibition is kept up within those dull brick houses, before which the tall column lifts its head. All the world knows the Messrs. Keeling and Hunt, whose effigies seem to stand in the public eye upon a vast pyramid of pine-apples. This firm hold sales of various kinds of fruit in their auction-rooms in Monument Yard. On these occasions the long apartment makes a show, before which, for quantity at least, that of Chiswick pales. Pine-apples by thousands, melons, forbidden fruit, and mangoes, fill the room from end to end; so famous indeed is the display, that there are lithographic engravings of it, in which the salesmen are seen walking about as perplexed apparently by the luscious luxuriance around them, as Adam might have been in his own happy garden. The pine-apple market is of modern date. The first cargo was brought over about twelve years ago, and since that time the traffic has rapidly increased, and at the present moment 200,000 pines come yearly into the port of London, of which nine-tenths are consigned to Messrs. Keeling and Hunt, the original importers. They are principally from the Bahamas, in the West Indies, where they grow almost spontaneously; but of late years they have been more carefully cultivated, and grafts of our best hothouse pines have been taken out to improve their quality. There are five clippers appropriated to the carriage across the sea of this single fruit. The melons come from Spain, Portugal, and Holland. Spain is known to abound in melons, for Murillo's beggar-boys are perpetually eating them; but we believe it will be news to most Englishmen that the land of dykes supplies London with fragrant cargoes of an almost tropical fruit. The largest foreign-fruit trade, however, by far, is that in oranges. We shall perhaps astonish our readers when we tell them that upwards of 60,000,000 are imported for the use of London alone, accompanied by not less than 15,000,000 lemons. Any time between December and May, the orange clippers from the Azores and Lishon may be seen unloading their cargoes in the neighbourhood of the great stores in Pudding and Botolph Lanes. There are 240 of these fast-sailing vessels engaged in the entire trade, and of this fleet 70, at least, are employed in supplying the windows of the fruiterers and apple-stalls of London. All these fruits, together with nuts and walnuts, apples, plums, pears, and some peaches, &c., are disposed of weekly at the auction sales in Monument Yard to the general dealers, the majority of whom are located in Duke's Place, close at hand, and are mostly Jews. Indeed, we are informed that many of them are the identical boys grown up to manhood that used some twenty-five years ago to sell oranges about the streets, and whose old place has gradually been taken by the Irish. They act as middle-men between the importers and the tribe of peripatetics, who at certain times of the day resort hither to fill their baskets and barrows. Covent Garden also supplies retailers with oranges and nuts, especially on Sunday mornings, when the place is sometimes crowded like a fair. The following bill

of quantities, drawn up by Mr. Keeling, is derived, we believe, from the Custom House returns :—

Fruit.	
Apples	39,561 bushels.
Pears	19,742 „
Cherries	264,240 lbs.
Grapes	1,328,190 „
Pine-apples	200,000 „
Oranges	61,635,146 „
Lemons	15,408,789 „

Nuts.	
Spanish nuts }	72,509 bushels.
Barcelona }	
Brazil	11,700 „
Chesnuts	26,250 „
Walnuts	36,088 „
Cocoa-nuts	1,255,000 „

Of the amount of bread consumed in London we have no specific information, but there are data which enable us to approximate to the truth. Porter, in his "Progress of the Nation," gives us the returns of eight schools, families and institutions, containing 1902 men, women, and children, each of whom ate on the average 331 1-16th lbs. of bread per annum. Now if we multiply this quantity by the number of the inhabitants of the metropolis—2,500,000 or thereabouts—we have a total of 413,760,000 half-quarter loaves of 2lbs. weight each. The flour used in puddings, pies, &c., we throw in as a kind of offset against the London babies under one year old. Some of this bread is a contribution from the country, and one Railway—the Eastern Counties—brought last year 237 tons 12 cwt. to town.—*Quarterly Review*.

HERB GARDENS.

THE streets, houses, cabs, omnibuses, noise, dirt, heat, crowd, bustle, are unquestionably travelling out farther and farther from the centre of the metropolis, rendering it very problematical at what particular point we can be said to reach the open country. This is now such an oft-told tale, that we need not stop to mourn over it. One curious result is, that the regions whence vegetable supplies for the London market are in large part obtained, are gradually driven to a distance from us. We all know about the market gardens of Fulham, Earl's Court, and other places west and south of the metropolis; and a glance at a map shows that new streets and squares are approaching dangerously close to those gardens; giving warning of the day, probably not very far distant, when growing cabbages and lettuces must, figuratively speaking, walk off to a greater distance.

There are some peculiar gardens which, having not yet begun to be disturbed by bricks and mortar, still continue to supply London in as quiet a way as heretofore. Among these are the Herb Gardens at Mitcham. For more than a hundred years past, many of the culinary, medicinal, and perfumery herbs have been specially grown at Mitcham, in Surrey, for the London markets: we do not mean exactly Covent Garden Market, but the warehouses of the wholesale druggists. There are hundreds of acres thus appropriated, by herb-growers who devote their whole time and attention to this particular kind of culture.

When we consider that various kinds of herbs require different kinds of soil for their efficient growth, it can hardly be supposed that any one spot will rank high above the whole of them. It is probable that the neighbourhood of Mitcham possesses a soil which, although not especially fine for any one purpose, is of a good average quality for herbs generally. It is, of course, not in Mitcham itself that these gardens are located; for Mitcham is a quiet village, with a few quiet natives of the old school, and some quaint quiet residences belonging to quiet city men, who go quietly up by omnibus to town every morning. But, taking Mitcham as a centre, there are Tooting on one side, Streatham on another, Croydon on another, Beddington, Carshalton, Sutton, Morden, and Merton on others; and between these several villages and Mitcham there is still an abundant area of open land available for any crops to which the soil may be suitable.

Around these places a keen eye can readily detect the farms or gardens of those who look to London for a market, not always for medicinal and perfumery herbs, but sometimes for culinary vegetables. The scene is not brilliant, or gaudy, or highly coloured: for the most useful plants are not often the most showy; and here everything is essentially useful. Nevertheless, a herb-garden is a beautiful object; for it always contains a few brightly-flowering plants; and who can forget the pleasant world of herbs and simples among which many of our old writers lived and thought?

Dear old Gerard. It is pleasant to look into your Herbal, and to appreciate your undoubted faith in the truth of all that you assert. We prefer you in the old dress of fifteen hundred and ninety-seven, before editors and annotators had "improved" you. We like your engraved title page, with the trimly set-out garden, the beds of flowers and shrubs, the gardeners digging and watering, the lady and gentleman promenading in the costume of Elizabeth's reign, and cupids watering the fruit-trees. We like the hearty earnestness of your dedicatory address to Sir William Cecil. There is no more fine language here:—"If delight may provoke men's labour, what greater delight is there than to behold the earth apparelled with plants, as with a robe of embroidered work, set with orient pearls, and garnished with great diversity of rare and costly jewels? If this variety and perfection of colours may affect the eye, it is such in herbs and flowers that no Apelles, no Zeuxis ever could by any art express the like: if odours, or if taste may work satisfaction, they are both sovereign in plants, and so comfortable, that no confection of the apothecaries can equal their excellent virtue. But these delights are in the outward senses; the principal delight is in the mind, singularly enriched with the knowledge of these visible things, setting forth to us the invisible wisdom and admirable workmanship of Almighty God."

Gerard treats of all plants under three heads. The first comprises grasses, rushes, corn, flags, and bulbous-rooted plants; the second includes all sorts of herbs for cooking, medicine, and sweet-smelling use; while the third is made up in a miscellaneous manner, of trees, shrubs, bushes, fruit-bearing plants, rosins, gums, roses, heath, mosses, mushrooms, and coral, which last is placed in strange company. Gerard's second class—the herbs for cooking, medicine, and sweet-smelling use, are those that are chiefly cultivated by the Mitcham herb growers; lavender, chamomile, liquorice, mint, peppermint, belladonna, poppy, wormwood, aniseed, horehound; plants from which druggists obtain spirits and oils, and perfumers obtain scents, and tavern-keepers obtain liqueurs.

The year is accurately portioned out at these gardens: the different crops being made to fit in one after another with exact regularity. There is one magnato grower who has four or five hundred acres of land appropriated to various plants; and from the system adopted, not only is the gross produce large and valuable, but the number of different plants is very considerable. One plant requires a whole year to arrive at perfection, while another will yield its marketable produce in a few months; one is cultivated for the sake of its flowers, another for its leaves, a third for its seeds, a fourth for its stem, a fifth for its root. On all these accounts, the herb-grower studies closely the characteristics of each plant, and so parcels out his ground that there shall be no idleness. The days of fallow have passed away. As some philosophers declare that change of employment is the best rest for mind and body during all working hours, so do cultivators insist that absolute rest to a field is absolute nonsense: the field, they say, is never tired of growing crops; it is only tired of growing one particular crop. Hodge, the ploughboy, of blessed memory, when asked to mention the most luxurious enjoyment which his heart could conceive, declared that swinging upon a five-barred gate and knawing a ham-bone the while, would be his crowning felicity. Yet Hodge would have liked an occasional change even from this ecstasy. The same with land. Each crop exerts a particular and peculiar action upon the soil, and often renders it better fitted than ever for some other particular crop.

The ground of the market-gardens within a few miles of London is tilled and manured to the very highest degree, more being spent upon an acre than on any other garden-

ground that can be named. Eight or ten pounds per annum are often paid as manual labour. But what is the result? That four or five crops may be got from the same piece of ground in one year; each crop making its appearance in due season, and the ground being strong and hearty, after all. These market-gardens have already been noticed in "Household Words" and we will therefore now keep to herbs.—(*Household Words*.)

(To be continued.)

TO CORRESPONDENTS.

*. We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of *The Cottage Gardener*, 2, Amen Corner, Paternoster Row, London."

HERACLEUM GIGANTEUM (*Pink*).—You will find full particulars in our 161st number, page 76. It is one of the easiest of plants to cultivate. Sow the seed in April; transplant the seedlings when two inches high, injuring the root as little as possible, to where they are to remain. A deep, rich, moist soil, such as the margin of a ditch or pond, suits them well.

POULTRY (*A New Subscriber*).—You keep five Shanghaes and five Dorkings in a yard twenty-six feet by five feet, and wonder they do not thrive, nor lay! The only poultry which would exist—we do not say thrive—in such a prison, are the Cochins, nor would they escape being killed by being egg-bound and paralysed, unless well supplied with green food, and no animal food. Whoever advised you to give them "raw sprats" (!) is totally ignorant of poultry-feeding.

FANCY FOWLS EGGS.—S., and many other correspondents, so frequently write to enquire where they can purchase Pea Fowls, Golden Pheasants, and other ornamental fowls eggs, that any one having them to sell would find it answer their wishes if they advertised in our columns.

POLLARD (*T. S., Liverpool*).—This, and "Middlings," "Sharps," and "Random," are the bran of wheat in various degrees of fineness.

PROFITABLE POULTRY (*R. Gough*).—In answer to your query, we cannot do better than refer you to the remarks of a correspondent in today's paper. If we wished to combine a profitable supply of eggs, with a good supply of chicken, we should keep Cochins-China pullets and a Dorking cock.

MIMOSA (*F. E. C.*).—Your specimen is of *Acacia lophanta*, sometimes called *A. elegans*. It is a native of New Holland.

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Advertisements.

ESTABLISHED ABOUT HALF A CENTURY.

BASS and BROWN'S New Seed List is now ready, and contains everything which may be desired of the choicest new and other Vegetable Seeds.

Having given much attention for a considerable number of years to testing, by comparison, the various sorts of vegetables introduced, devoting a large portion of our land to such purpose, we are enabled to offer our seeds with confidence.

The collections annually supplied from our establishment have been highly approved, and the following are strongly recommended.

ASSORTED COLLECTIONS OF VEGETABLE SEEDS.

No.	Collection for a large garden, containing twenty quarts of Peas, and all other vegetables for one year's supply	£	s.	d.
No 1.	Collection in smaller proportions	3	0	0
No 2.	Collection ditto	2	0	0
No 3.	Collection ditto	1	5	0
No 4.	Collection of good kinds for a small garden	0	15	0

A FEW NEW VARIETIES OF PEAS.

Epps' Lord Raglan, or Improved Mammoth, produces eight to ten Peas in a pod, and allowed to be the finest in cultivation	per quart	0	5	0
Epps' Monarch, new, tall Marrow, largest size Pea in cultivation	per quart	0	5	0
Fairbeard's Nonpareil, a delicious, new, wrinkled Marrow of great produce and fine pods, coming in before the Champion of England	per quart	0	2	6
Mein's Paradise, a most valuable early, very large Marrow Pea; pod large, long, and well-filled; fine-flavour. This Pea, though very large, comes in immediately after the Warwick	per quart	0	2	6
Hair's New Defiance, a fine variety of wrinkled Marrow; productive	per quart	0	1	9
Sangster's New Number One; Daniel O'Rourke; Hair's Dwarf Mammoth; Early Emperor, or Fairbeard's Conqueror; Burbidge's Eclipse; Champion of England; and other finest sorts. See Catalogue.				

The lists of *Flower Seeds* will be found, as usual, very select, including, also, *Imported German Seeds*, just imported, in splendid assortment. Goods Carriage-free (not under 20s.) to all the London Termini, and all stations on the London and Norwich Colchester line.

Seed and Horticultural Establishment, Sudbury, Suffolk.

UNEQUALLED NEW MELON, GOLDEN DROP GREEN FLESH.

EDWARD TILEY having purchased the whole of Messrs. Wood and Son's stock of Seeds of the above-named Melon, can with confidence recommend it to all growers of that splendid fruit. It has been thoroughly proved by an eminent Melon grower, and declared by all who have seen and tasted it to be one of the finest-flavoured Melons yet grown. It is a very beautiful colour when ripe, skin very thin, flesh firm and solid, and of a most superior melting and delicious flavour. Free setter and prolific bearer. It possesses a great advantage over others in its exceedingly handsome appearance when placed upon a table or on the stall of a fruit salesmen, and for exhibition this Melon will be the favourite.

THE KING, Superb Scarlet Flesh Melon.—This is a variety very much wanted, and which has for some time past been neglected, but is now becoming in great request; such being the case, **EDWARD TILEY** has just procured a stock of this most superb Hybrid Scarlet Flesh Melon, which he can recommend with as great confidence as those before sent out by him, and which have all given the greatest satisfaction to the public.

Each of the above varieties may be had in packets containing six seeds, 1s 6d per packet.

The following fine varieties of Melons can be highly recommended, and are all warranted true:—

The Queen	1s	Beechwood	1s
Bromham Hall	1s	Windsor Prize	1s
Incomparable	1s	Emperor	1s
Golden Ball	1s	Fleming's Hybrid Persian	1s
Golden Perfection	1s	Blackall's Green Flesh	1s
Bowwood	1s	Bailey's ditto	1s
Victory of Bath	1s	Snow's Hybrid	1s
Camerton Court	1s	Gordon Castle	1s
Chichester Prize	1s		

A packet of the Golden Drop and one of the King Melon, and one packet of any other variety mentioned will be forwarded, post free, on receipt of 3s 6d in cash, or penny postage stamps.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.

NEW SEEDLING POTATO—THE CHAMPION

KIDNEY.—This Potato bears a great resemblance to that fine old Potato, the Ash-leaf Kidney; it possesses the following good qualities over the Ash-leaf. If planted at the same time it will be ten days earlier, all the sets always vegetate well, and do not die off in the ground as the Ash-leaf does; 2 pecks of seed will produce a greater weight of Potatoes than 3 pecks of the Ash-leaf. It is quite equal to that in flavour, and is eatable during the whole winter. Sets that have had the shoots broken off five or six times during the spring will vegetate again as if it had been the first shoot. About twenty Gentlemen and Gardeners who had seed to plant last season have assured me that they never before grew any Potato to equal it, and should continue to grow it as a first early Potato. Numerous orders have been already received from persons who saw it growing during the last summer. It has been grown and thoroughly proved for the last four years, and found to be less liable to disease than any other Potato that has been grown. Out of twenty-five sacks grown this season there was not a single diseased Potato among them.

Sold in quantities of not less than 1 peck; these will be sent, Hamper and Package free, at 5s 6d per peck, or 4 pecks for £1, hamper free. A remittance in cash must accompany all orders, or small amounts in penny postage-stamps. Purchasers would do well to name the nearest Railway Station to their residence.

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.

GLASS for CONSERVATORIES.—Thos. Millington

requests attention to the present PRICES of SHEET GLASS, packed in 100 feet Boxes, Good Quality, about 15 oz. to the foot, Boxes 1s extra, but allowed for when returned.

Inches.	100 feet.	Inches.	100 ft.	Inches.	100 ft.
6 by 4	10½ by 8½	15 by 10			
6 ½ " 4½	11 " 9	15½ " 10½			
6 ½ " 4½	11½ " 9½	16 " 10			
7 " 5	12 " 9	16½ " 10½			
7 ½ " 5½	12½ " 9½	17 " 10			
8 " 6	13 " 10	17½ " 10½			
8½ " 6½	13½ " 10½	18 " 11			
9 " 7	14 " 10	18½ " 11½			
9½ " 7½	14½ " 10½				
10 " 8					

Large Sheets for cutting up in Cases, at 2½d and 3d per foot.

T. M. has supplied large quantities to Mr. Rivers for Orchard Houses, &c.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars with and without covers.

Plate, Sheet, Crown, and Ornamental Window Glass; Crystal Glass Shades for Ornaments.

87, BISHOPSCATE STREET WITHOUT, LONDON.
(Same side as Eastern Counties' Railway.)

GLAZING WITH OR WITHOUT PUTTY.—

E. DENCH, Patent Hot House Works, King's Road, Chelsea.
Printed Price Lists supplied on application.

WEEKLY CALENDAR.

D M	D W	FEB. 27—MARCH 5, 1855.	WEATHER, EAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
27	Tu		30.415—30.321	53—32	W.	—	53 a 6	34 a 5	5 23	11	13 2	58
28	W	EMBER WEEK.	30.517—30.285	53—19	N.W.	—	51	35	6 0	12	12 51	59
1	Th	Cymindis humeralis.	30.702—30.677	54—18	S.W.	—	48	37	6m26	13	12 39	60
2	F	Abay melanarius.	30.668—30.627	55—18	S.	—	46	39	6 47	14	12 27	61
3	S	Hydroporus 12-pustulatus.	30.628—30.509	54—18	E.	—	44	41	rises.	⊙	12 15	62
4	SUN	2 SUNDAY IN LENT.	30.752—30.705	50—33	E.	—	42	42	6 a 24	16	12 1	63
5	M	Hydroporus linnellus.	30.714—30.570	45—20	S.E.	—	40	44	7 35	17	11 48	64

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 48.4°, and 34°, respectively. The greatest heat, 64°, occurred on the 28th, in 1846; and the lowest cold 15°, on the 4th, in 1852. During the period 116 days were fine, and on 80 rain fell.

SEASONS of scarcity have a twofold beneficial influence upon man,—they humble him, and they stimulate him to increased exertions. That humbling and those exertions are not without their reward; nor have they been without such reward at any period of which records are existing. Whenever seasons of scarcity have prevailed, a Christian community has never failed so to act as to secure, after the scarcity, seasons of greater abundance. Higher cultivation, new crops, and more extensive tillage, have all been the means adopted and blessed with success.

It requires but little reflection to discern that every year is an effort, and a successful effort usually, to avoid scarcity. Every year increases our population more than one hundred thousand, and it has been increasing, year after year, from the day our country was first known to history; yet in proportion to that increase has been the increase of her eatable produce. Within the memory of the present generation—new manures, such as Guano, and Phosphate of Lime; new tillage, such as drainage and drilling; and new and more productive varieties of every crop, from the Cabbage up to Wheat, have been introduced. All these efforts to increase production are to meet the increased demand for food and to avoid scarcity.

Examples of this kind are now before us in the Chinese Yam (*Dioscorea Batatas*), and the Sweet Soft-Grass (*Holcus Saccharatus*).

We have already noticed the Chinese Yam (page 311). It has been suggested for cultivation as a substitute for the Potato, and as a remedy for the scarcity caused by the continued failures of this root as a source of food. It is again brought to our notice by a pamphlet by Mr. John Henderson, who not only sells the sets required for the production of the Chinese Yam, but has collected into the pages of his pamphlet all that is known about its cultivation.* We have only to object to his proposal to call it the “Chinese Potato,” for which there is no more reason than there would be to call a Carrot from Japan, the “Japanese Potato,” merely because it was proposed to be a substitute for the common Potato.

The following extract is evidence that Mr. Henderson has gathered together fresh information relative to this fleshy-rooted plant:—

“M. de Montigny informs us that the Chinese put aside all the smallest roots at the taking up, and place

them in pits or trenches, covering them well with straw, over which they afterwards spread a coating of earth. In the spring they are taken out and laid horizontally in beds of prepared mould, where they soon germinate and produce long trailing stems. As soon as they have attained about six feet in length (which is generally in a month or six weeks' time) they are taken up to be replanted and layered. The manner in which this part of the operation is performed is as follows. The ground having been prepared and thrown into ridges, either by means of the plough or spade, a slight *furrow* is made on the top of each ridge with a rake or hoe, and the plant laid in it lengthways, and the whole of it, except the leaves, is covered lightly with earth, care being taken that they (the leaves) are left exposed: if it rains the same day they take immediately; but should it be dry weather, it is necessary to water them till they begin to grow. At the end of fifteen or twenty days they will produce tubers, and at the same time throw out long trailing stems, which ought to be examined from time to time, to prevent their taking root, and so producing another set of tubers, which would injure the full growth of the first or main crop.

“But I find that the ordinary manner in which the Chinese cultivate it is still more simple than the above.

“The earth is first formed into ridges, when small tubers, or portions of large ones, are planted on the top, at about three feet apart; after the plants have attained a little strength, the shoots are spread over the sides of the ridges and pegged down at the leaf end, six or eight inches from each other (care being taken to cover the joints or parts pegged down with a portion of earth), when they soon strike root and throw out tubers; by this means, immense quantities of roots, of the size of early-framed kidney potatoes, are raised on a comparatively small piece of ground.

“But, to obtain them of a large size, small tubers, or portions, are planted on ridges, at ten inches to one foot apart, and the plants are allowed to grow freely till late in the Autumn; the tubers by this means attain on an average one pound and upwards in weight. The produce, when the ground is required for other purposes, is taken up and stored away for the Winter and Spring; and it seems a peculiarity in this root that, if exposed to the frost, it is not injured by it, nor does it have any inclination for sprouting till the natural season for planting.

“I also find a much quicker way of procuring a stock of young tubers for seed by growing them in a cold frame, or on a gentle hotbed, and taking the cuttings as soon as they appear; it being only necessary to cut off a leaf, with a small piece of wood without a joint, which is inserted in the mould (ordinary cutting mould) to the leaf—a pot of six inches diameter would contain about fifty cuttings—the pots should then be placed in a gentle heat, and kept close, either by means of bell-glasses or otherwise. Before the cuttings strike root they will throw out small tubers on the surface of the mould (similar to those sent out to the public); as

* *The Chinese Potato, and Holcus Saccharatus, with directions for cultivation.* By John Henderson. Price One Shilling. With Plates.

soon as they are the size of a pea they should be hardened off and planted out thickly in the open ground.

"In the Chinese work entitled *Ti-li-king* (that is to say the Book of the Produce of the Earth) is the following passage relating to a variety of the *Dioscorea*, which appears identical with our species:—"When the root is very long, it is cut into pieces of two inches in length and planted."

"In the course of the year, these produce an abundance of seed, which is gathered and buried in the earth, in order to preserve it; in the spring it is taken up and sown in rows of prepared ground; thus treated, the plants grow vigorously, and soon yield their produce. Liquid or strong manure must not by any means be used. If it be the object of the cultivator to grow a very large amount of produce on a small space of ground, the Chinese agricultural work, *Nong-sang-Tsi-Yoo* (Book vi., fol. 19), gives the following directions: 'Trenches or pits are dug, 10 feet long, 3 feet wide, and 5 feet deep; the bottom is carefully cemented over with tiles or bricks; it is also advisable to brick or board up the sides, in order to prevent the roots of the surrounding plants or trees from entering. The pits are then filled with earth mixed with decayed manure. When three rows or drills are made the length of the pits, and the seeds or small sets planted close together, as soon as the plants begin to grow vigorously, they are supported with stakes: at the end of the year the tubers will have become extremely large, and with the produce of one pit sufficient food will be produced to support a man an entire year.'

"Again we find the following in the *Wou-pen si-chou*:—"A little before and after the period called *Han-chi* (4th April), trenches are dug in ground of a sandy nature, 10 feet long and 2 feet deep; a compost made of equal parts of earth and decayed manure is thrown in and covered with the surrounding earth 2 feet thick. Tubers are then cut into pieces of 3 to 4 inches in length, and planted or laid close together about six inches deep in the trenches. If the weather is dry, they may be moderately watered. After the period of *Chouang-Kiang* (2nd October), and before the ground is frozen, the tubers should be taken up and placed in cellars."

The high price of corn, and the consequent disinclination of both the manufacturers and the consumers of ardent spirits to have these manufactured from that which not only increases the price of those spirits but the price of bread also, by rendering corn still scarcer, has suggested the cultivation of the *Holcus saccharatus*, the Sweet Soft-Grass, or, as it has been termed, "The Sugar Cane of North China."

This reed-like Grass has long been known, and is cultivated, we think, for the production of Sugar in some districts of Nepaul, as well as in the cold districts of China. Mr. Henderson says:—

"Whilst travelling, in the autumn of last year, in Belgium and France, I met with the *Holcus Saccharatus*, the properties and qualities of which I now propose to describe. It is not, strictly speaking, a new plant, since it was cultivated in Italy in the fifteenth century, where it was probably introduced by the Venetians and Genoese, during the period of the great maritime intercourse which then existed. It was not, however, known among us until about five years ago, when M. de Montigny, the French Consul at Shanghai, sent a collection of seeds to the Geographical Society at Paris, among which was found a packet labelled 'Sugar-Cane of the North of China.'"

There is some chance of its succeeding in the milder parts of England; and an estimate of its value may be formed from the following facts ascertained from its culture in France:—

PRODUCE PER ACRE.

Stems and Leaves, 68,938lbs., or more than 30 tons.	
Stems only ... 43,984lbs.,	19 tons.
Juice (55 per cent. of stems) ...	2,415 gallons.
Sugar (8 per cent. of juice) ...	1,935lbs.
Pure spirit (Alcohol, 63 per cent. of juice),	182 gallons.

The dressed fibre of the stems from an acre, after the juice has been expressed, weighs four tons, and these are ascertained to be worth £10 per ton to the paper-maker.

Those who wish for fuller information will do well to expend a shilling upon Mr. Henderson's pamphlet. It contains abundance of information relative both to the *Dioscorea* and the *Holcus*, and has a lithographed drawing of each plant.

A FEW CHOICE ORCHIDS FOR JANUARY AND FEBRUARY.

It is almost needless to expatiate here on the great boon that is conferred upon the lover of flowers during the dreary winter months, by the introduction of even one really good winter-flowering plant; and the next greatest hero to him who traverses other climes to enrich his own country's gardens, is he who shall rescue from neglect or oblivion plants which, although tolerably well known amongst plant men, have been cast aside for lack of a discriminating eye to hunt out, and, by high culture, develop their hidden treasures.

It may seem presumptuous in me to chat about Orchids, after such excellent papers as my old friend, Mr. Appleby, gave us in the earlier pages of *THE COTTAGE GARDENER*; and, in good truth, I have nothing particularly novel to exhibit; but we may not spend a whole life in simply searching out novelties,—there are some old-fashioned things which will bear talking about again and again.

First among January Orchids, in point of utility, I would name the old *Zygopetalum Mackayi*, so well known to every Orchid grower. But as our duty, in the main, consists in leading on those who are taking their first steps in gardening, we must frequently descend to what we consider well-known points in gardening. Let me, then, advise all those who have a tidy greenhouse, pretty well heated, and who desire to have an Orchid or two on which to try their hand, to get a good plant of the best variety of *Zygopetalum Mackayi*.

Nothing is more easily cultivated, providing it can have a warm corner in the greenhouse. This Orchid is none of your fastidious things which cannot bear contact with moist vegetable matter; it is a gross feeder, and revels in abundance of fibrous, peaty matter, providing the one great principle in all Orchid culture be adhered to; viz., the rapid passage of all moisture be duly attended to, and, as a consequence, the free admission of the agency of the atmosphere.

The next in order I may name is *Epidendrum fragrans*. Many of this family are very shy, and will only succeed on blocks; but here is one robust as the *Zygopetalum Mackayi*, and nearly as gross a feeder. Unlike many of the family, the blossoms are not noted for gay colours; but this is amply compensated for by its free-flowering habits in the dead of winter.

Next, I must turn to one of the finest things amongst the Orchid tribes, a perfect gem—*Calogyne cristata*. If

any thing in the plant way can convey an idea—can act as a symbol—of purity, chastity, or integrity, it is this charming thing. We have a plant now in full blossom, which is a yard round, or more, and on every side hang down its beauteous flowers. I really know of nothing more delicate and elegant in the floral world. It has been in blossom for nearly three weeks, and will continue for three weeks longer. It grows in a latticed Oak basket; the sides within lined with sphagnum, and the interior filled with huge crocks, set edgewise, and lumps of very fibrous peat crammed in the interstices.

Odontoglossum pulchellum is another ebaste thing,—a rival of the Lily of the Valley. This is delightfully scented, and might be grown extensively by our marketmen for bouquets, for which it is peculiarly adapted. It requires ordinary Orchid treatment, and, like most of the *Odontoglossa*, loves moisture and shade.

Epidendrum nutans and *Harrisonianum* are two useful winter Orchids also, and agreeably scented. These grow a yard high. Let me also name the old *Stenorynchus speciosus*, which, although not particularly showy, is of importance in the Orchid-house as being of a red or scarlet colour. A good bush or two of this helps out the winter display much, and then it lasts so long in blossom.

Eichmen fulgens, too, when it can be got to flower late in autumn, is a beautiful winter plant; and although the blossom, which is beautiful, does not last long, yet the calyx, germ, &c., being presistent, and with the foot-stalks of the flower highly-coloured, produce a beautiful effect for many weeks.

Dendrobium fimbriatum is a pretty winter Dendrobe; its lovely ruby-pink possesses such an exhilarating freshness. This requires a basket, as it loves not contact with moist peat.

Oncidium ornithorhynchum is another gem of winter. This is of tolerably easy culture, but not a gross feeder. *O. Cavendishianum* is a noble Oncid, and in full bloom with me at this time. I am not assured, however, that I have a right to place this amongst winter-flowering Orchids.

Phaius maculatus is a most beautiful Orchid, and may be cultivated just as the old *P. grandiflorus*, or, as it used to be called thirty years ago, *Bletia Tankervillea*. They are both majestic plants, and possess a dignity of appearance unknown amongst the small Orchids.

Before I close this paper, let me not forget the old *Goodyera discolor*. This, grown in masses, is a charming little plant.

Now all these require but ordinary treatment. One thing we may observe, that if any amateur attempt their culture with but one greenhouse, he must endeavour to get them into Cucumbers, or other frames, whilst they are making their growth, and that will be during April, May, and part of June. About or before Midsummer, he may remove them to his greenhouse, and if he has Vines therein, the atmosphere will, of course, be kept rather close, warm, and moist,—this will just suit the Orchids. Shade will be essential at that period, and as the Vines, or other plants, will require liberal ventilation, the Orchids should be allowed to occupy a shelf at the end, and at a point where the immediate action of the air can be warded off. In such a situation, each Orchid having a pan of water beneath it, they will succeed very well.

R. ERRINGTON.

MARCH FLOWER-GARDENING.

AFTER such a long winter, the very first thing that should be in readiness, at the beginning of March, to prepare for the flower-garden, is a good substantial hot-bed of some sort or another, one-light box for the very

smallest garden, a two-light box makes a more substantial bed, and a three-light frame the best of all this class; but a propagating pit, with a regular steady bottom-heat with hot-water, and a bottom temperature of from 80° to 85° or 90°, and with a top heat of from 65° to 77°, and a passage, or standing-way inside, to look to and after the plants is, of all others, the best for propagating all kinds of spring cuttings for the beds. But for one who needs, or who can afford to have, such a propagating pit, there are hundreds who would find a one-light box over a nice hotbed quite sufficient for all their wants; therefore, I shall begin with a one-light box, and by supposing that the severe frost has made sad havoc among the cuttings of last autumn, if not among the whole stock of old plants, more or less. As for myself, I never had to winter a greater number of plants with less means than I had this last winter, and I think I may safely say that I never yet escaped so well as I am likely to do this winter and spring.

My system of sowing *Geranium seeds* before they are quite ripe, to save time, the way I put the pods in round the side of the pots, like a row of cuttings, gives me three, four, or five plants in a patch instead of one, as would be the case if I separated the seeds from the pods, or beaks, and thus rendering it useless even to disturb the little things till the following April, is worth all the directions that ever were thought of or put in practice on the subject. I saved no seeds after the middle of last October, or rather, I did not plant any more *Geranium* seed-pods after that period, but I saved a good many seeds of them later in the autumn, which are now in seed-papers; and I will suppose that many of my readers have *Geranium* seeds of their own saving ready for sowing as soon as the first hotbed is ready; but unless the reader is a good practical gardener, and has a steady machinery at his command to force and push on the young seedlings with strong heat till the summer is hot enough to do the same without forcing, this is not at all the right time to sow the seeds of bedding *Geraniums*; it would evince little practical knowledge on the subject to think of such a thing just now, for this reason, that such seedlings cannot be proved this season; you may pot them again and again, or plant them out-of-doors in June, but they will not bloom before the frost comes.

I have had as many conveniences, and as ardent hopes and wishes of seeing my crosses in bloom, as any man, living or dead, and I have exerted all my means, year after year, to force my seedlings to a proof, and although I have succeeded so far as to see one out of a dozen, perhaps, in bloom, at the very end of the season, I always lost more than I gained by the practice. The extra room which large plants of unproved seedling *Geraniums* require next winter is a serious consideration; the sooner in the spring you sow the seeds the larger the plants will be, and the more room required; and if you grow them to the size of specimen plants at the shows, you will not see their flowers so soon as I shall, if I live, those of my last October seedlings, which are now so small that I have them conveniently at the rate of three dozen in one small pot of the 48-size, just the smallest pot that I could winter one seedling in next winter if I were to sow the seeds now.

Unless these *Geranium* seeds are sown the same season they are gathered, the right time to sow them in the following year is from the 10th of May till the end of June; or if I must name a day, I should fix on the longest day in the year. I am thus particular, because I know many who have saved seeds from last year, from seeing how easily I could fill a bed from a few pots, and who are now waiting for the first hotbed of the season to get them sown. The next thing to a blessing is to get rid of a particular anxiety, and none need be entertained about *Geranium* seeds till all the beds are planted,

unless it be one pot or so to prove if I am right or wrong.

I cannot now think of a single seed, for the use of the flower-garden, which will not answer to be sown in a hotbed during the last week of March just as well as if it were sown to-morrow. This is also a great consideration, and leaves our one-light box almost entirely free for cuttings at present, but not entirely; for we must put four rows of pot-plants across the top or back of the bed—those that we are scarcest of for cuttings—and the front part of the bed is free for cutting pots. By this arrangement we can shade the cutting part of the frame without darkening the plants. This will give us more sun-heat than if all the glass was shaded; and when this heat is more than enough, we give air by raising the light at the back, or tilting it, as we say. It will not do to slide down a light to give air so early in the season, because the draught of cold air coming in below, under the glass, would kill everything, and much sooner those cuttings nearest the draught. I never would give air to a cutting-frame till the heat was up to 80°; but one with pot-plants and cuttings, like ours, I would tilt about an inch with a wedge-stick as soon as the glass showed over 75°; when the heat was above 80° I would push in the wedge a little; but if I had one clear inch of air, or opening, between the back of the box and the light, I would not care a straw if the glass went up to 90°, or a little higher. Some people make unnecessary trouble about giving and taking off air from a hotbed; but for a forcing bed, like ours, believe me, there is no reason in the world for being so particular.

The proper management of an early-forcing, or cutting-hotbed, consists in a good, warm, dry covering at night, and the same day and night all round the sides and ends of the bed, from the first day it was made till the last day of April. This is to keep the snow and frost, and particularly the cold winds, from the body of the bed. Dry fern is the best for this, and straw next. Straw mats, or reed mats, or hurdles thatched with either, would be equally good; but without some such protection the heat soon goes off in a hotbed so early in the season.

It so happens that a new recruit (See "Queries and Answers," in another page) under our colours has lost all, or almost all, the cuttings made for him or her last autumn. "Vectis" is in a fix; his men do not know much about cuttings or flowers, and he purposes to do the cuttings and sowings himself this year, and, indeed, to manage all the flower-garden except the mowing and heavy work; his beds are good; he has plenty of everything except practical knowledge, and has had more than enough of botheration and disappointment for some years past; he has lots of old scrubby plants to make cuttings from, and a willing mind to buy a few more for the same purpose, trusting to our pages for the necessary head-work; and very likely there are many like him on our list. To him, or to them, and to all new beginners, our practice is this, to tell them plainly that they cannot learn any branch of gardening all at once, or in one season, if they do nothing else but read about it; but that a great deal may be done and learned in a few months, when one handles everything himself, under good and plain instructions; and that more gardening can be learned by one month's practice than by twelve months' reading about it; but that without reading, and that very attentively, a tolerable gardener cannot now hold his head above water.

We begin on the smallest scale with a one-light box hotbed, about one-half of which is filled, or is to be filled, with old plants to get cuttings from; the other half is to be filled with cutting-pots; by-and-by, the natural heat of the season will promote sufficient growth in many plants for all the cuttings required from them.

and this will ease the hotbed of pot-plants, to leave more space for cutting-pots. As the ease in hand supposes almost an entire stranger to gardening, who has lost all the cuttings which were made last autumn, we put off seed-pots for the whole month of March for want of room, alleging, that for all practical purposes, the first sowings for the flower-beds will be early enough if done in the first week in April. Next week, we shall devote some space to the consideration of the principal seeds which require the first attention in the spring.

Calceolarias and *Petunias* take longer time to make plants fit for planting-out from spring cuttings than any other, not even excluding the dwarf *Scarlet Geraniums*; therefore, *Calceolarias* and *Petunias* ought to be the first plants in the forcing-pit. *Tom Thumb* the next, for the same reason, after them. I do not think there is much difference between one bedding-plant and another. At page 73 of our last volume (Vol. XII.), I said that Mr. Pince's *Ajax* *Calceolaria* was the best, or, at least, the most likely for a bedder of all that I had seen. Last November he sent me a very fine specimen of it, to show how well it blooms out-of-doors, as I thought, for in the letter I was only informed, by one of the clerks, that the specimen was sent from Mr. Pince, but that Mr. Pince would write to me in a few days to tell me all about it. From that day to this I heard no more of *Ajax*, or Mr. Pince; both may have gone to the Crimea, and starved there, for ought I can tell. The next best *Calceolaria* is certainly the *Kentish Hero*, of all that I have seen of the clouded, coloured, and spotted sorts. *Sultan* is the third best I know, and it is all but black; but Mr. Appleby has seen a cross between *Sultan* and the *Kentish Hero*, which partakes of the character of both—therefore must be good. The name is *Model*.

Eclipse is a new *Calceolaria*, between purple and crimson, which I saw exhibited last summer, and which I took under my patronage on the recommendation of one of our best judges, Mr. Turner, of Slough. The *Wellington Hero* is the best of the large, clear, yellow-flowering *Calceolarias* I have seen; and the best of the class, small-flowering kind, is a variety of *Rugosa*, differently called in different places; it is the one which was so prominently at the Crystal Palace last summer, and there called *Multiflora*, but it must have been *Rugosa multiflora*, as there is a wild species named *Multiflora*; then there are *Rugosa* and *Integrifolia*, two of the oldest and best known; and also *Amplexicaulis*, which every one approves of.

Old plants of any or of all the *Calceolarias* ought now to be in heat to get cuttings from, but only on the principle of better late than never; for to tell the truth, all *Calceolarias* should be increased rather in the autumn. Through the mildness of the season, down to the middle of January, the old *Calceolarias* were kept in a growing state, and top-cuttings from such are now treacherous, and must be carefully selected; if the plants appear to be at all given to flower, as is likely, cuttings from them will not root so easily, nor make such good plants as cuttings of softer wood, or such as rise from cut-down plants in the autumn; with this one exception, I never found *Calceolarias* difficult to manage from cuttings in the spring. Cuttings of them should be about two inches long, the two bottom leaves only should be cut off; sixty-sized pots are the best for them, and very sandy soil, with half-an-inch of clean sand on the top, will suit them best. One row of cuttings round the edge of the pot is better, for young beginners, than filling the whole surface of the pot, as, by that plan, the cuttings are more likely to damp off from over-crowding. I do not approve of making cuttings from the tops of *Calceolaria* plants just rooted, although that plan is safe enough for almost all bedding-plants besides, therefore the stock should be had from the shoots of old plants. All cuttings of soft plants will root in a nice hotbed

without bell-glasses, but they would root sooner if under such glasses, or small hand-glasses which would hold four or six small cutting pots under them.

All cuttings must be watered, so as to have the sand and soil moist the whole time; but once in two or three days will be often enough, unless the sun is strong, or the bed is too hot. I have watered cuttings twice in one day, and I have known pots which did not want any watering for a whole week. No one can tell how often a pot of cuttings should be watered without seeing it; and, on the whole, I would prefer a little too much than that the cutting should want water for a single hour. Very good, free drainage is now so well understood, that there is less risk from too much water, and more harm from the want of sufficiency.

Every word I have written about these Calceolarias is applicable to *Petunias*, except that you can make cuttings from the tops of the first cuttings as soon as they are rooted, if you are short of stuff for better cuttings. All cuttings of *Petunias* ought to be short, and, if possible, be from short-jointed shoots. If the tops of the first cuttings of *any plant* are made again into cuttings, the bottoms should not be disturbed till they "break" again; that is, till they make fresh shoots. Rose, purple, and white are the only distinct colours in *Petunias*. The *Shrubland Rose*, and *Shrubland White*, or *Royal White*, as it was called at the Crystal Palace, are the best two; the purples are endless, and so are the streaked, or fancy shades. Any of them is good if one likes it; all depends on individual taste.

If I was forced, by circumstances, to make a stock of *Scarlet Geraniums* from spring cuttings, I would choose the longest cuttings I could find; ten inches would be the shortest; but beggars must not be choosers, nor gardeners either, if they are in a fix. Everybody makes cuttings of some *Scarlet Geranium* or another, in the spring, but no one would choose this season for a whole supply. Everybody, also, who has a very new *Geranium* will make the most of it in the spring, but is a different thing altogether from being compelled to fill so many beds from spring propagation.

Cuttings of *Ageratums* ought to be made from the shortest-jointed wood, and be no longer than a couple of inches; they soon get long enough, and often more than enough, and require stopping at every second joint they make to the end of April. There is a variegated *Ageratum* now, which makes a nice change; in the same way as the variegated *Salvia fulgens*, and both ought to be in every garden, either on the mixed or any other plan. Very little heat will force *Salvias* for cuttings, and natural growth is better still. If they are to be forced, take the strongest cuttings you can find, and let them be four inches long; but one joint will root if there is a scarcity. The blue *Salvia patens* will now come from cuttings as fast as any plant, but after it comes up to bloom it will not pay to try it from cuttings.

The variegated *Coronilla glauca* is a beautiful edging plant, and for a mixed garden; it roots now in about three weeks.

Cineraria amelloides is the easiest plant of all the blues to get a stock of, and is fit for anything; it is the very best blue we have for making nosegays, and it is seldom one sees a cutting of it fail, so you may fill the whole pot with them; three inches is the proper length for them.

For a mixed flower-bed, and where the soil is a good deal worn out, *Zauschneria Californica* comes in very useful, and flowers as tall as the *Fuchsias*, and much in the same way; on fresh or rich beds it goes too much to leaf. I have seen it in a strong clay border, last year, bloom as freely as *Fuchsia globosa*.

Two years ago, I mentioned a very excellent old, but very scarce, *Verbena*, called *Helen*, of which a bed was

made in the garden of W. Byam Martin, Esq., of Bank Grove, near Kingston. I used this *Verbena*, at Shrubland Park, in a wide border in front of the Swiss summer-house, which we used for a collection of the strongest *Verbenas*, all mixed together, but I then believed no one had done so elsewhere. I learned, however, from the French lady, that this plan has been, and is, much approved of in first-rate places, and that the best display of *Verbenas* she had seen in England was on that very plan. Recollect this was not in a bed, but on a long border, the longer the better. In my border, *Helen* was my favourite plant—a rich mulberry colour, and a strong, upright grower. At Bank Grove, it was one of the richest beds I have seen, but I am afraid it is scarce in the trade. *Fragrans* was the name of the next best of my mixed *Verbenas*. This is an old blush kind, and the sweetest of the race, except *Teucrioides*. *Lady Holland* is a very strong, light *Verbena*; it was new last year, but I had seen a bed of it the autumn before. I believe *Hamlet* is the best, or one of the best of the grey *Verbenas* to mix with *Heliotropes*, instead of the *Duchess d'Amale*. *Cleopatra* is an excellent crimson *Verbena* for one bed, or a mixed bed. *Defiance* is still the best and strongest of the creeping scarlets, and, perhaps, the best scarlet *Verbena* we have for people of limited means. Edward's *Wonderful* is by far the most unique and novel of all the *Verbenas* for a bed. I think Mr. Turner, of Slough, is yet the only one who has it; he had it last summer at Chiswick, and at the Regent's Park Shows. It is a purplish-blue, with a large white eye. I only saw it in a pot, but Mr. Turner told me he had a bed of it, or had seen one, the best of the kind he ever saw, and I have not the smallest doubt about his eye. The *King of Purples* ought to make me his Prime Minister, for my oft mention of him as the best purple *Verbena* for a bed; but here I am only speaking of the most particular kinds, and could not pass this one. Some like one kind, and some another; the soil and situation make a great difference in *Verbenas*; so much so, indeed, that I would not bind myself to my own selection in more than one garden.

The very best and cheapest way to get good, healthy *Verbenas*, is to lay small pots under the runners early in September, to leave them so till near the end of October, then to take thirty-two sized pots, and to put four plants out of the small pots into one thirty-two, and to tie up the shoots to a stick in the centre, these will hardly stop growing all the winter, at least, they will come out in the spring as thrifty as if the runners were still on the old plants, under cover. A few of such pots would be sufficient for any one; that is, a few pots of each kind; they yield strong, healthy cuttings, which root in a few days. All cuttings of *Verbenas* ought to be short, not more than two inches long. The same light, sandy soil, with a little of the clean sand on the top, will do as well for every kind of cutting for the flower-garden as the most delicate mixture one could think of.

Every plant for the flower-garden will root from this time to the end of April sooner than at any other time; and if old plants are stumpy and short of young shoots for cuttings, the only way is to give them a little extra heat.

I shall conclude with a *particular* advice, which is suggested by the letter of a now subscriber, who says, that he has two good kitchen-gardeners, but who care nothing about flowers; and when he suggests any improvements about flower-beds and all that sort of thing, they tell him "it cannot be done," on some pretext, or another. This year he has determined on "doing" all the flowers himself, with the help of a boy; and my advice is this, that he had much better go to Sebastopol; he may do some good there, but he will never accomplish what he proposes. Adam was the first gardener;

and every one of the breed, your humble servant among the rest, has the old Adam in him, more or less, to this very day; and I know it from experience, and often to my cost, that any one who usurps the authority of a gardener, young or old, will come off only second best in the matter of seedlings, cuttings, and waterings; so that if the two good kitchen-gardeners failed in the flowers, the master and his boy will fare worse, and they cannot help themselves; but if they should succeed, I should like to record the fact. D. BEATON.

FUCHSIAS FOR EXHIBITION.

"How should Fuchsias be grown so as to appear as they did at the Show at the Regent's Park in June, last year?"

Want of space, and numberless inquiries, prevented me answering this question two or three weeks ago. These were chiefly grown in the pyramidal style, and were from four to six feet in height, and from three to four feet across. At that period, I had a number of plants in bloom of a similar size, and which were brought to that condition by two or three different modes of treatment; either of which will secure the desired result, according to the age and the size of the plant you have to work upon, and the conveniences at your disposal. Some of our friends blame their gardener, because he cannot produce such giant specimens as soon as June or July from some little mites of plants received in the autumn, or early in the spring, though he may have nothing more to assist him than a greenhouse, and, perhaps, a cucumber-box. Now, with such advantages, he may produce fine specimens of plants later in the season, even from very small, young plants, but from such plants he cannot produce such large specimens so early; and it is not fair to expect it. I will, therefore, presuppose three circumstances, and then the treatment necessary in each case.

1. *Where there is only a Greenhouse.*—To obtain from this fine flowering plants, in June, you must have plants trained and grown to nearly that size the previous autumn. A full exposure to an autumn sun will do much to mature the wood before housing them, underneath or above the stage, or in a warm shed, free from frost. The soft points of the shoots should be nipped off, to concentrate the juices and prevent damping. By the middle of February the buds will be breaking, and the plants should be looked over, and receive what little more training and pruning is necessary to give them the desired shape. When the buds are half-an-inch in length, or so, the plants should be repotted in larger or similar sized pots, kept a little shaded for a few days, and then fully exposed to the light; syringing the head frequently, to prevent too rapid perspiration, and giving water at the roots as they require it. Place them at this period at the warmest end of the greenhouse, and keep the atmosphere rather moist and close, by frequently dusting the plants over head with water, and keeping the stage sprinkled. A few shoots may threaten to be robbers, by coming extra strong, and these should be nipped to make two or three instead of one. It will have been perceived that by this mode little *pruning*, comparatively, is given to the plant before starting into growth, as it is intended that every bud left should be flower-producing. When the shoots are from three to six inches long they will begin to show flower-buds profusely. Before that, as soon as the fresh roots begin to kiss the sides of the pot, weak manure-waterings should be given now and then. But as soon as the flower-buds appear, a casing on the surface of old cow, sheep, or deer-dung, just surfaced with a little sandy soil to hide it, will give size to the flowers. A slight surfacing of superphosphate of lime will also be useful

for that purpose; half a tea-spoonful will be enough at a time for a 12-inch pot. As soon as the first flowers approach maturity the plants must have more air and full exposure to light. Where there are room and conveniences to keep large, symmetrical plants over the winter, this is the easiest of all modes for getting large plants, at an early period, smothered with bloom. In fact, the blooming takes quite the conceit out of the mere *growing*. The only fault attending it is, that the lovers of extra-fine foliage will be disappointed. Not only the foliage, but the flowers also, would be smaller than on younger plants, unless the top-dressing and manure-waterings were attended to. With such attention, I have had good flowers, healthy, but not extra-luxuriant foliage, and handsome specimens, from June to August, when younger plants took their place. Want of space, in winter, forced me to have the extra trouble of growing on younger plants. I resolved to try the old successful plan again this season; but unfortunately, before being housed, my older plants received too friendly a visit from Mr. Frost, and their stems just received enough of injury to prevent a healthy flow of fluids passing through them. For a splendid early bloom, on large specimens, no plan can answer better that involves less trouble and conveniences, and never having received much coddling in the way of extra heat, the plants look robust and healthy, and there is little need to harden off to fit them to any position.

2. *Where, in addition to a Greenhouse, there is another house, Peachery, Vinery, &c., where, during the end of February and March, a temperature of from 50° to 60° may be secured.*—In such circumstances, such large plants, treated as above, will break stronger, and grow more luxuriantly; and by hardening off gradually, will bloom freely in the greenhouse by the beginning of June. With such means, and especially in a Vinery, with an average temperature at night of 60°, and a little shade from the Vines, nice stubby plants, from two to three feet in height, and some fifteen inches or a foot across their base, may be grown into the size of the Regent's Park plants by the middle or end of May, and then a gradual exposure to more air and light, and a drier atmosphere, will present a mass of bloom by the middle of June. Considerably more care will be required for these younger plants than older ones. Any extra strong shoot must be stopped, so as to have them as uniform as possible in size. A strong shoot must be selected for the leader, and if that does not throw out side-shoots enough, and in the right place, it must be stopped by pinching out the point to make it do so. If even that does not do, a bend must be made over the place you wish the shoot to come from, in order that the strain, by bringing more sap to the part, may cause the bud there to start strongly, when the shoot should be elevated again, and another leader selected, and that may require to be stopped again. What is thus done with the main leading shoot must also be done with any side-shoot that threatens to monopolise undue strength to itself, or to have the place rather bare of twigs. Without this care, many side-shoots near the base would compete with the leader, and thus destroy the artistic pyramidal shape of the plant, if that shape of training is resorted to. With such a convenience, plants will attain a large size, and be more luxuriant by the middle of June than the older plants, with greenhouse treatment merely, could be expected to present; and though the flowers will scarcely be so numerous, they will, in general, be finer and larger. I had some plants of *Volligieur*, &c., some two feet in height, in February, that were six feet by three-and-a-half feet in June, and covered with bloom. That variety, which, after all new kinds, is a great favourite with me, is peculiarly suitable for such treatment, on either of the modes I have referred to, as it becomes well-shaped and twiggy all over,

if almost left to itself, being superior, in this respect, to Banks's *Glory*—though others, such as *Diadem*, *Ne Plus Ultra*, *Black Prince*, *Collegian*, and *Nonsuch*, also spindle out and become twiggy quite naturally. Such large kinds, as *Compte de Beaulieu*, *Ajax*, *Matildiana*, *Diadem of Flora*, &c., require more frequent stepping, if the plant is designed to be at all symmetrical; and with the command of such hothouse treatment, the last stepping should be given before the end of April for plants intended to bloom in June; and before the end of May the plant should be inured to a mere airy and bright atmosphere.

3. *Where, in addition to the temperature of such a house, there is also the means of plunging the plants in a sweet, mild bottom-heat.*—Even old, large plants, as first referred to, will relish this exceedingly, provided it does not rise above 70° at first, and never reaches 80°. I have seen large plants greatly benefited at starting in a warmish greenhouse, by being plunged in clean, fresh sawdust, about fifteen inches deep. Sawdust produces a nice, gentle bottom-heat for a long time. There is one thing I would caution any friend about who might use it—always place the pot of a valuable plant upon a piece of wood, or tile, &c., if you plunge it in sawdust. The reason is, that if you do not do so, the frequent waterings and dryings of the plant will draw the sawdust so firmly into the hole at the bottom of the pot, as almost to make the pot water-logged, and thus make a marsh plant of one that liked no such treatment. A sweet tan-bed, or one of dung and leaves, will even be better than the sawdust; and could you commence with such large plants as I first named, in March, you could easily have magnificent specimens by the first days of June, after growing them a fortnight of gradual hardening. The gases that escape from such sweet-decomposing material will give such vigour and luxuriance to the foliage as could not be obtained at that early season in a greenhouse alone. With younger plants, such as I referred to in the second supposition, and where growth and form must be the first considerations, a bottom-heat of 70° to 80°, and a top-heat of from 55° to 60°, with a rise of 10° from sunshine, would give you luxuriant growth, which would require you to keep petting and pinching the ever-strong shoots until the beginning of May. In hardening-off such plants, it will be necessary to raise the pots, bit by bit, out of the bed, and allow them to stand on the surface a few days before removing the plants to a more open and cool position in the greenhouse.

Some of our best florists strongly disapprove of ever giving more than greenhouse treatment to a Fuchsia; but if the changes are made gradually, I never found that a Fuchsia, during the first stages of growth, suffered by receiving only a little lower temperature than would be necessary for a Cucumber. From small plants received in the autumn, or even in January and February, I have had nice flowering plants in June and July (not Regent's Park ones), by giving them this hotbed treatment. They were shifted in February, and plunged in a heat of from 75°; in a short time they grew so fast as to want another shift; and then another; and then considerable attention in training. These, though not so large, look very neat, as the growth is all fresh, and when gradually hardened off, no one would know, unless you told them, that ever you gave them hotbed treatment.

As a succession to either of these that I have named, cuttings inserted in a hotbed, in February or March, and kept in a mild hotbed for a few weeks after petting-off, will furnish nice, little, flowering plants from August and onwards.

One case more I will allude to. You have a nice, old plant in the autumn, but no room to keep it; and yet you wish to have a strong plant, healthy and luxuriant,

by the end of summer. When the leaves have fallen, cut the plant down to near the surface of the soil. In spring you will be presented with a number of shoots there, and you may please yourself with having only one, or with leaving five or six; one for the centre, and four round it. By keeping such a plant in the greenhouse, you will have a fine conical mass in August. If, after potting, you could put it into heat in the end of February, and attend to the training, you may have a magnificent specimen, and all fresh grown wood, from the middle to the end of June. If you leave five shoots, or so, care must be taken that the outside ones are not allowed to rival the centre, so as to destroy the symmetry. From such cut-down plants, I have had shoots from four to six feet long, and well furnished with side-shoots, so as to present a somewhat regular rounded cone appearance; but if from these, and small plants, you wish large plants in bloom at an early period, there is no alternative; you must give them a hitch with bottom-heat to set them fairly on their legs.

I have used almost every kind of soil. Rough, fibry loam, with dried pieces of old cow-dung, and dried pieces of decayed leaf-mould, with a little charcoal and road-drift, will grow them admirably, giving fine foliage, compact habit, and large flowers. But though, perhaps, it may be only fanciful, still I have thought that the flowers were always better coloured if from a third to a half of the compost consisted of heath soil.

VARIETIES.

The best kinds of Fuchsias have frequently been given. The following are a few not very old:—

Collegian—crimson tube and sepals; corolla purple.

Ajax—a very large, reddish flower.

Princess—a good, white-sepalled kind.

Pearl of England—similar to *Princess*.

Duchess of Lancaster—one of the best, with white sepals and tube.

England's Glory—a splendid one, with white sepals; can hardly say which of these is best.

Glory—an excellent dark flower; larger and less twiggy than *Voltigeur*, but both handsome.

Dr. Lindley—one of the best darks.

Incomparable—something like *Purity*, but whiter and reflexing more.

Hendersonii—a double flower of the clearest purple.

Sir John Falstaff, and *Globosa perfecta*, both in the way of *Globosa*, but very large.

The following are newer varieties:—

Telegraph—wax-like, red and violet.

Trentham—scarlet sepals; fine, purplish corolla; large; a little resembling the *Globosa* varieties; sepals half reflexed, and very spriggish in their appearance, reminding one of Punch's delineations of a *great statesman*, who stands before us generally with a sprig in his mouth.

Duke of Wellington—scarcely equal to the last; sepals light scarlet; corolla rosy-purple.

Queen of Hanover—whitish, reflexed sepals, and pinkish corolla; stiff habit.

Olio—reflexed-blush sepals, and pinkish corolla; neat and compact.

Grandissima—long tube; white; and sepals white; corolla deep claret.

The following could not be precluded before this season, and will, no doubt, be greatly in demand, from the advertisements of Messrs. Henderson.

Queen Victoria—bright scarlet-crimson, reflexed sepals; corolla pure white.

Mrs. Story—sepals long, reflexed, crimson; corolla clear white.

Galanthiflora pleno—sepals crimson; corolla something like a double Snowdrop.

Although there seems to be a little haze over the

matter, there can be little question that Mr. Story has the honour of originating the first white corolla among Fuchsias.

Florence Nightingale—another with a white corolla, which I have not seen, either as a plant or as a drawing, but which I have heard spoken highly of. Let us hope that no one would give such a name to anything that was not beautiful and first-rate in quality; as the more than heroic doings of that pure noble-hearted lady have brought the salt-drops over many a weather-beaten cheek that had long been strangers to the luxury of a tear.

Empress Eugenie—sepals reflexed, crimson, and corolla said to be pure white.

The best two accompaniments to these, in addition to *Glory*, &c., would be

Monarch—crimson tube and sepals; corolla fine bluish-purple.

Prince Albert (Banks)—reflexed, crimson sepals; corolla larger than *Glory*, and as intense deep purple.

No doubt there are many more that will make their appearance. Few amateurs can hardly do without some, at least, of these, especially the whites. R. FISH.

ADVICE TO YOUNG GARDENERS.

(Continued from page 318.)

IN my last paper on this interesting subject, I pointed out the great care a young man should take in accepting his first situation. I will suppose he has met with and obtained one as near as possible suitable for him. I remember once applying to a celebrated Nurseryman to give me a situation, and the reply that he made sunk deep into my memory, it was so just and appropriate; it was as follows:—"It is a most responsible thing to put a man into a situation; there are two parties to suit,—the man must suit the place, and the place must suit the man; if not, either one or the other, or both, will be disappointed." Many a nurseryman is blamed by gardeners, especially if they have been customers to him, if, when they are out of place, they (the gardeners) apply to him for a situation, and he does not give them one immediately. Let such, or others, remember, that places suitable for them are not always open, and it would be bad policy, as well as unjust, to give a poor place to a good, clever gardener, as, on the other hand, it would be equally wrong to send an indifferent gardener into a first-rate situation. Competition now in gardening, as well as every other pursuit of life, is so great,—there are so many more gardeners than places,—that a man who does not exert himself to the utmost to obtain a complete knowledge of the business in every department, will be sure, in the long run, to be thrown out of the ranks, and had better try to get a living in some other way, unless he can be content to be a mere labourer.

I suppose, however, that our friend, the foreman, has, by study and diligence, acquired a full knowledge of his business, and has proved his capability to manage the place I suppose him to have obtained. The grand question he will put to himself, upon entering upon it, will be, how to manage, so as to keep it, and satisfy his employer? He must remember, it is not a sinecure. Just in proportion to the character he has obtained as a foreman, will the effects of his attention and skill be expected from him.

I must make here a few observations on the difficulties which he will have to encounter. He cannot exactly follow a mere routine in practice in every point. In taking a fresh place, he will find it, probably, very different, in many particulars, to the one he has left, in one or two important points; especially that of climate

and situation. It may be warmer; it may be higher, or lower; it may be a level garden; or it may be a sloping one; it may be well sheltered by neighbouring woods; or it may be exposed on one or more sides. Also, the soil may be heavy, tenacious, and damp; or it may be light, sandy, gravelly, and dry. To all these he will bring his general principles into action, and suit his operations accordingly.

Permit me to direct his attention to the following heads:—1, Improvements; 2, Honesty to both master and men under him; 3, Civility; 4, Visiting Gardens, Nurseries, and Exhibitions; 5, Exhibiting; and 6, Marriage. Upon each of these I might find matter enough for an entire paper; but, as I hope and expect that a man, rightly brought up to be fit to manage a good garden, will have acquired a knowledge of his own mind, and some general knowledge of men and things also, I shall only give a few hints on each, to assist him to carry out, or bring into action, such knowledge.

I mentioned, first—*Improvements*. It rarely happens that a place has been so well managed that no improvement can be effected upon it. Study the state of the garden thoroughly, and if you can see any improvement can be made, communicate in a most respectful manner your ideas to the owner. These improvements may consist in merely repairing the glass-houses, walls, walks, &c. Or it may be desirable to drain the garden, renew the fruit-trees, both on the quarters and walls. It may go to the extent of pulling down and rebuilding Pinceries, Vineries, Peach-houses, Pits, and Plant-houses. Before speaking about these improvements, make a pretty nearly correct estimate of the expense, and then state frankly your ideas. Whether the owner will carry out your ideas or not, he will be pleased to find that you are desirous to improve his garden, to render it more profitable and pleasing, and more conducive to his enjoyment, as well as creditable to yourself. The improvement may even extend to the flower-garden and pleasure-ground. In this part the gardener should consult the lady as well as the gentleman; in truth, both together, though in most cases the lady will have the most controul here, and generally the best taste, in laying it out and furnishing it. Having respectfully pointed out what you conceive to be improvements, leave the decision entirely with them. You cannot judge the causes that may operate to prevent them being carried out, therefore, submit with the best grace to their pleasure. You have done your duty, and therefore rest satisfied. It may be, that part of your suggestions may be acted upon at once, and the rest afterwards, when you have proved that you are trustworthy and sincere, and not merely suggesting alterations instead of decided improvements.

Secondly, *Honesty*.—I need scarcely insist that it is the bounden duty of every servant to be honest to his employer. The thing is self-evident; but a man must not only be honest, but able to prove and show that he is so. You must keep an exact account of every expense incurred in the garden; and I would advise, also, an exact account of everything that goes out of it. Many a quarrel with the cook would be avoided, if the cook knew that everything that went into the kitchen was booked against it. Also, all presents of fruit to the owner's friends ought to be put down, and that would prevent many heartburnings as to what had become of, as the case might be, the Pines, Grapes, Peaches, &c. I have known many gardeners that have lost their places for want of books to show the outgoings as well as incomings of the garden. Having discharged this duty, it behoves the gardener to be honest equally so with his men; see that their time is regularly kept and paid for. Never distress them by over hours or over tasks without paying them for it, if you possibly can. Treat them as fellow-men, remembering that you have

a Master, your Heavenly as well as earthly one, to give an account to. Remember, also, that you have been in a similar position yourself. Be firm, and make them do their duty, and be kind and civil to them. In truth, bring that golden divine rule into practice, both to master and man, namely—"Do unto all men as you would they should do unto you." T. APPELBY.

(To be continued.)

WOODS AND FORESTS.

THE LARCH.

(Continued from page 376.)

Soil and Situation.—At the above page I left the young Larches two years transplanted in the nursery rows. They are then quite large enough to plant where they are to stand (when properly thinned, of which I shall write hereafter,) to form timber-trees. Like most other trees they grow quickly where the soil is moderately deep and dry; but as this tree will grow and make tolerable timber where few others would live, namely, in high exposed situations, in scenery that may be described as barren and rocky; in such places there is very little soil to be found, and it is in such places that this hardy tree ought to be planted most largely; their spiry tops shooting, as it were, into the sky, give a picturesque appearance to such, without them, dreary, wild scenery. Planting them in such places is no easy task, and many will perish during the first season, unless great care is bestowed in planting. Our weather prophet, Mr. Beaton, advised that all planting should be finished this season before the fifteenth of January because then he prophesied (aye, and truly too) that after that day all planting would be stopped by the severity of the frost. I may venture to prophecy, or rather direct, that in every coming season every Larch should be planted before the 15th of December, in order that success may attend the planter's work. In such rocky, alpine situations we may reasonably expect the frosts of winter to commence severer and earlier than in the warm valleys, and by planting in the early autumn, the trees will immediately put forth new roots, and by them be enabled to keep hold of the scanty soil, and thrive well the following season. In planting, the hole should be dug in the latter months of the summer, the stones picked out, and the soil, or rather the debris of the rocks, for such it generally is, laid on one side. Then, as soon as the leaves are fallen, take up as many trees as will serve the planters for one day, take them to the locality early in the morning, and go at the planting with a hearty will, and get them all planted before the shades of night set in. Though done quickly, this operation must be well done. Every tree must have its roots spread out every way; the soil, the best the place will afford, laid upon the roots, and then be well and firmly trodden down. There is no fear of its being too heavy upon the roots, such soil, in such a locality, is sure to be light enough the spring following. In such situations it is desirable to plant thickly; partly because there will be some deaths, with the greatest care; and partly because the plants will afford shelter to each other as they grow. Follow on this planting every workable day till all are planted, finishing as early as possible.

There are many situations where the Larch will prove the best of all trees to plant with, that are not such as I have described above, I mean our sandy, poor, heath moors; such as I noticed in crossing what was once Delamere Forest, near where our friend Mr. Errington enacts his gardening triumphs. In such soils the Larch thrives well, and makes a profitable investment, and that quickly too. Now, in planting in such a situation, there

might be scattered amongst the Larches a few hard-wooded trees. In the deepest and best soils a few Oaks might be intermingled, and also, in thinner parts, some of the narrow-leaved Elms, and in still poorer soils a few Beeches. The fall of the leaves of the Larch would enrich and increase the soil, and in some years after, these barren, sandy wastes might be clothed with a noble forest; the Larch, in the meantime, growing and coming off as a crop to pay the expenses incurred, and as rent for the land. Many of these wastes have been very injudiciously planted with hard-wooded trees alone, merely because there was some of this sandy heath-mould, the deposit of the leaves of the heath, the furze, and the weeds. They produce what! a miserable, stunted, starved plantation, that will scarcely ever make a tree fit for a post, much less a stem fit for use for timber purposes. Plant with Larch, and there will be a prospect of the wild waste producing a valuable timber at no distant period. The planting of a thin sprinkling of the hard-wooded trees amongst the Larch, I look upon merely as an experiment, though the shelter the Larch will afford them will certainly be a great help to their growing up straight, and might, in all probability, encourage them in time to make something like a growth into respectable timber; still, I should look to the Larch to repay the owner.

Having got all the planting finished by the time specified, should any severe gales take place, let a few men go over the newly-planted wood, and see if any of the trees are blown down on one side, lift them up carefully, stir the surface-soil, and tread it down again firmly, then leave them to bear the breezes and frost of winter, till the warm spring-weather has thawed, dried, and warmed the ground, then go over them again, lift up those that may be down, and tread them all, whether down or not, over again. They will require no further care, unless rampant weeds should spring during the summer. If such appear, go over the plantation, and chop them down with a strong, heavy hoe.

The following autumn, the vacancies, if any, by deaths or accidents, should be filled up, and after that has been done once, no further care will be necessary for two or three years, when a pruning will be necessary, of which I must write, together with some direction on thinning, at a future opportunity. T. APPELBY.

(To be continued.)

PLANTING AND CULTIVATION OF THE HOP.

A CORRESPONDENT having inquired how Hops are cultivated in Kent, and as their planting and general management form a very important feature in Kentish husbandry, and it being mostly all done by manual labour, it may, with some degree of propriety, be termed gardening, rather than farming; in fact, a plantation of Hops is called "a Hop Garden," be it ever so extensive; and as the cultivation of this singular plant involves many points common to other plants, I will endeavour, in this chapter, to explain some features in the soil and its preparation for planting, which, in some instances, might be copied with advantage for other crops.

Beginning first with *Soils*. Many persons, unacquainted with the character of the Hop, will be surprised to hear of its being cultivated on soils differing widely from each other in character; yet, it must not be inferred from that that all are alike suitable; but the anxiety of cultivators to have a few Hops induces many to plant them where they can hardly be beneficially grown; yet this is not done to any great extent; for those who grow for profit are generally too shrewd to attempt the growth of an expensively-produced article on soil too much at variance with its wants, to continue doing so, at any great sacrifice; but as the Hop

itself, or rather its varieties, have the means of accommodating themselves to different soils, I need only mention here, that I have seen a large plantation of Hops on a black peaty bog, resembling some of those fenny districts that are to be found in various places; this peaty substance resting on pipe-clay, or something of that sort, was intersected by open ditches, four feet deep, and about twenty feet apart, their sides and top being allowed to be grown over with grass, to prevent their falling in, and the space between them ridged over. This description of soil, which was about four feet deep, might be regarded as the most extreme one that they are planted on; but the general appearance of the Hops was good, and the crops heavy, but the quality inferior to those grown on drier soils; for instance, contrast the above with that of a plot of ground, where stones predominate to such an extent as to resemble a newly-made road after it has laid some time exposed to rains, and the subsoil so exceedingly porous as to give rise to the saying, that such lands require rain "every night in summer, and all day on Sundays;" for, certainly, grass, and all farming and gardening crops, would seem to require it quite as often as that; but, somehow, this description of soil often produces the best Hops in the country, for it is of the kind which the best variety of Hops likes to grow in. It is, also, peculiarly adapted for maintaining the Hop-plant for a long period of years; there being instances wherein plantations of Hops have existed on this soil for an hundred years, or more, without any change, and without any appearance of their wearing out. This, however, is an exception to the general rule, which is to grub them up after a lapse of twenty or thirty years, or when circumstances render it advisable. The instances where Hops are cultivated, for very long periods, on the same grounds, are those, generally, of small occupiers, in favourable situations, who, anxious to have as many as possible, plant, perhaps, the whole of their holding with hops and fruit, either separately or mixed.

An amateur, commencing Hop-growing in a district where it is not known, had better not commence on too large a scale at first, lest it turn out unfortunately; but it must be remembered, that a very small plot, in such a position, can never be remunerative, for, independent of the cultivation of the plant, the Hops have to go through a course of manufacture which cannot well be done on a small scale. The small grower, in Kent, has a much better chance that way than those of other places, where few or none are grown; for they can have their produce all gathered and dried at the kilns of their neighbours, where all the apparatus is in good order, but I should say a less quantity than two acres can hardly pay the grower who has to start everything at once.

I have no doubt but many districts where Hops are not grown could be made to grow them, and certainly better than they are grown in some parts of Kent; but so much depends on the season, and other causes, that a beginner must not be disheartened if he be unsuccessful at first; for I have known an excellent plantation turn out a complete failure for two or three years in succession, that much reliance ought not to be placed on one failure being a proof of the unsuitableness of the locality; for though a farmer, after sowing his wheat on good land, and tending to it until it come into ear, can, with an almost certainty, look forward to a crop, the Hop-grower, who is equally assiduous in attending to his produce, and which may promise remarkably well in the early part of the season, may, nevertheless, fall a victim to the blight, or mildew, and he often does not derive a single penny; whereas, I believe there were instances last year in which the produce of an acre of Hops realized upwards of two hundred pounds; and plenty of instances in which growers made more than

one hundred pounds per acre of their whole plantations, while it must be borne in mind that many did not receive anything—the crop of 1854 being bad, except in a few places.

In the *preparation of the ground* for Hops, a generous policy will often terminate best, as a crop so valuable, and yet so capricious, must not be stinted for trifles; yet the mode is not so extravagant, after all, supposing the ground to have been previously an arable field, and of tolerable good depth in staple; the best course, if it be of sufficient size to allow of ploughing, to do so at some early period after it is vacant, say in autumn, or winter; the ploughing should be done as deep as possible; and, in addition to that, and simultaneously with its going on, a gang of men must be employed, with strong digging forks, turning up the bottom of the furrow ere the plough return again; to accomplish this, and keep pace with a plough and four or more horses, about ten or twelve men will be wanted, who, by being placed at intervals along the line of furrow, take each their part. Of course, the part turned up lies mostly in its same place again, but a part will get to the top, and some of the top soil to the bottom. This process, I need hardly say, is better than subsoil ploughing, which leaves a hard, unbroken bottom; whereas, the forking up is more beneficial, and frequently deeper done. Two furrows are worked by the above plan, the men walking over from one to the other as they proceed. A small field will hardly allow this, and, perhaps, the cheapest way would be to have it trenched by hand, unless it be already in very deep tillage; for, be it remembered, many acres of Hops are planted with only an ordinary deep ploughing, but when the subsoil will allow it, a little extra labour is not lost in their after well being.

In the *setting-out of the ground, and planting the young sets*, there is not much difference in the practice adopted; although, of late years, many new modes have been tried, but the plan by which at least nine-tenths of the hops are planted is on what is called "a square plant," i.e., the ground is set out accurately in lines, six feet apart each way, and their conjunction at right angles; this allows 1210 plants to the acre; but many growers have of late adopted "the triangle plant," or quincunx, as it is called by some—allowing the same number of plants per acre; either way will do; only, as the plantation is expected to remain for years, they ought to be set out with accuracy at first. The common way is to do it by line, sticking a stick up where the plant is to be, so that the planting can be done after. Those accustomed to the work have a long line, with pieces of red worsted worked in at the places where a plant is to be—say every six feet; but as a hempen line expands and contracts in accordance with the dryness or moisture, this is guarded against, by trying it against a chain, or other correct measure. This, however, the amateur will easily be able to accomplish.

If there has been no manure worked into the ground at the time of ploughing, or trenching, as above, a quantity of very fine stuff ought to be prepared for the reception of the plants at planting time. This is more especially necessary when bedded plants are put in, i.e., those which have been prepared a year in some nursery ground, as these will have roots. But as many plantations are formed by planting what are called "hop sets," which is something like what a gardener would call a good cutting with a heel to it, it is, perhaps, as well for the amateur to adopt that plan, and procure a number of "sets" from some one who can warrant their being true to their kind, as well as from a healthy stock; these must be planted with a dibber, about five around each stick that is set up; the ground for their reception being made very fine, either by taking some of the soil out of the place and adding fresh; otherwise, by taking the fine from the top of the ground; if it be an old

pasture broken up, and has received a fair share of frost, it will do without manure very well for one year or more, and the Hops will thrive well on such land, presuming it to have been good as well. The planting is usually done with a dibber; a boy distributing the sets, five to each hill; the planter generally smoothing the ground after planting them, and drawing a circle round with his dibber, but little more is wanted for some time; only, if sets be adopted, a row of Potatoes may be planted between the Hops, or it might be Mangold Wurtzel, or Turnips; and very often this crop is a remarkably good one; and as they do not prevent the stirring of the ground, &c., around the plants in summer, they do no harm; but where bedded sets are planted, which are plants one year forward, they ought not to be encumbered with anything between them; and ought, also, to have short poles to each hill; but, in a general way, "cut sets" are adopted, and usually do better the third year, and afterwards, than the others.

Although the above is the general way of rearing a plantation of Hops, it is right to observe that they can also be done by seed; but as there is no dependence to be placed on those coming from seed, and, in all probability, nine-tenths of the plants may be of very bad kinds, it is seldom adopted, except by those who are anxious to procure new kinds; for, as is the case with fruits, it now and then happens, a valuable acquisition may be made, but this being rare, seedlings are seldom adopted. Besides, the probability is, that a large proportion of those raised from seed may turn out "male Hops," which do not produce anything, but about whose presence in a Hop-garden much difference of opinion exists, and about which I will say something hereafter; suffice it here to say, that there are hundreds of acres without the male plant, that the amateur need not have it unless he particularly wishes it, and if he does, one plant in a hundred will be quite sufficient.

The *kind of Hop* most grown on stiff lands is called the *Grape Hop*, from its produce hanging in clusters like that fruit. It is very prolific, and does not require such long poles as the *Golding* or *Colegate* varieties, but it is inferior in quality to the *Golding*, although it will generally yield more; but as the *Golding* will only grow well on deep, rich, dry lands, the *Grape*, of which there are several varieties, are generally planted. *Jones's Hop* is also extensively planted by some; it is also not taller than the *Grape*, poles of ten feet being sufficient in most cases, and as poles are an expensive item in the management of the crop, it is important to avoid all useless expenditure, if possible; for that reason, many growers plant some *Jones's* purposely to use up all their short poles.

As I shall return to this subject shortly, I will add no more at present, unless it be a word to those who have never seen them grow. To those I may safely say, that a healthy plantation of Hops about the beginning of September is certainly one of the prettiest, if not the very prettiest, object in the vegetable kingdom; for I know of no plant to equal them for profuse bearing, and singular yet graceful appearance. No exotic, nor indigenous flowering-plant is half so pretty, in my opinion; and those who have seen them, all agree with me in the same remarks. The amateur who wishes for more extended information on the Hop, had better consult Mr. Lance's "Hop Farmer," a work of high standing, or the Prize Essay of the Royal Agricultural Society, awarded to Mr. T. Rutley, of this county, which contains much information. It is in their *Journal* for 1848, and states the whole routine at length.

J. ROBSON.

ALLOTMENT FARMING.—MARCH.

THE following rotations of crops are given, that each man may select for himself, now at the commencement of spring-work, the rotation most suitable for the size of his allotment, or the stock he keeps.

ROTATION FOR ONE ACRE.

Divide the land into four equal parts, containing forty perches each; separate these portions by small alleys of such a size as will permit a wheelbarrow to pass along with manure, and also for weeding the crops, or applying liquid-manure to them.

One portion to be planted with *Early Potatoes*, to be succeeded by *Turnips*, *Savoy*s, and *Cabbages*.

The second division to be planted with *Potatoes* in March, for the principal supply, to be succeeded by *Cabbages*.

The third division to be sown with *Parsnips* in February; *Carrots* and *Mangold Wurtzel* in April; and *Swede Turnips* in May. *Broad Beans* can be advantageously drilled in between the Parsnips in double rows, four inches apart, with an interval of six feet to the next row. The Parsnips will not be injured by the Beans, when, at the same time, an underground and top crop is produced.

The fourth division with *Wheat*, *Peas*, *Beans*, *Onions*, and a small portion sown with *Leeks*, *Lettuce*, and other small seeds, such as *Early York Cabbage*, *Savoy*s, and *Brussels Sprouts*, to afford a supply of plants to fill up the ground when the other crops are removed. The Mangold Wurtzel, Swede, and Cabbage strippings will afford excellent feeding for pigs.

Along the sides of the quarters could be planted a few dwarf *Apple-trees*, two or three *Damson* plums, and a few dozen *Gooseberry* and *Currant* trees. The four portions into which the land is divided can undergo a rotation of cropping; and one of them should be trenched each succeeding year.

ANOTHER ROTATION FOR ONE ACRE.

Potatoes; Mangold Wurtzel; Cabbage; Barley; Peas; Wheat.

ROTATION FOR THREE ACRES.

An allotment, or garden farm of three acres, for feeding two cows and several pigs, to be divided into six parts of half-an-acre each. The rotation of crops can also be carried out in each division in succession.

FIRST YEAR.

	SUMMER.	WINTER.
1st division,	Potatoes ..	Prepared by deep digging
2nd do.	Tares cut green	for Tares in October
3rd do.	Barley & Clover ..	Swede, White, and Yellow Turnip
4th do.	Clover cut green..	Trenched and ridged
5th do.	Carrots, Parsnips, Mangold Wurtzel	
6th do.	Early Peas, sown wide ..	Cabbage between the rows

ANOTHER ROTATION FOR TWO ACRES.

1st year,	Wheat, followed by winter Vetches.
2nd do.	Turnips.
3rd do.	Barley and Seeds.
4th do.	Clover.
5th do.	Oats, followed by Rye, which, in the 6th year is cut for fodder, and followed by Swedes.
7th do.	Wheat.
8th do.	Beans, with Cabbages transplanted between the rows.
9th do.	Oats.
10th do.	Mangold Wurtzel, Carrots.

ANOTHER ROTATION, TO FEED TWO COWS AND SEVERAL PIGS.

Three acres of land.

- $\frac{1}{2}$ an acre in Lucern, constantly.
- 1 acre in a grain crop, either Barley, Oats, or Wheat.
- 1 acre in Parsnips and Carrots (*Early Horn* and *White Belgian*).
- $\frac{1}{2}$ an acre in Mangold Wurtzel.

A seed-bed of early Cabbages is necessary to transplant as soon as the *Early Horn* Carrots are off the ground.

ONIONS should be sown the early part of the month; they delight in a good, rich soil, in a moist, shaded situation. For experiment, I one year marked out a piece of ground into five equal parts. On the first division was spread two barrowfuls of fine charcoal, on thirty feet long by seven feet

wide, which slightly covered the surface of the ground. Pigeons' and Fowls' dung was scattered on the second division, in the same quantity and in the same manner; the third had rotten dung; the fourth had lime; and the fifth division was without manure; they were all dug in between three and four inches deep. Those grown on the Pigeons' and Fowls' dung were the best, most luxuriant in growth, and of a very deep green colour. The others, on the charcoal, came next in size and appearance; and next, those grown on the ground manured with rotten-dung; but in the divisions with lime, and without manure, there was but little difference either in growth or foliage, and that was against the lime.

Onions are sown in drills ten inches apart, by which the hoe can be easily used between them, to keep down weeds and to stir the soil. In a continuance of very dry weather, a mulching of short grass between the rows will answer the useful purposes of keeping down weeds, preventing evaporation, and materially assisting the growth of the crop.

PARSNIPS are to be sown the early part of the month. The ground best suited for them is of a rich, open, or sandy texture, trenched two feet deep. If sea-weed can be conveniently procured, by mixing it with the trenching an increased produce will be the result; or, as a substitute, salt, in the proportion of a peck to four yards square, will repay the expense. Salt operates as a stimulant, which excites the absorbent vessels into greater action than usual; it increases their growth by enabling them to take up more nourishment, and to perform their circulations and secretions with greater energy. Salt is also destructive to grubs, and a protective against frost; for in soils where it is used plants suffer less than in others where its preservative influence is unknown. The seeds to be sown in drills made six inches deep and one foot apart; the soil to be pulverized, to cover the seed slightly; when the plants are three or four inches high to be thinned to six inches apart, and as they increase in size the soil to be drawn up to them. By the frequent stirring of the soil in earthing them up an ascending growth of the root is produced, and the admission of the atmospheric influences so beneficial to vegetation will much assist the size of the whole root.

POTATOES.—The main crop should be got in during the month. The experiments that I have tried with different manures for the cultivation of the Potato would be too proximal to detail here. Suffice to say, that the portion manured with wood-ashes produced the greatest quantity and best quality.

The analysis of Potato tubers contain in 100 parts—

Carbonate of Potash, with a little Chloride..	53.6
Phosphate of Potash	17.9
Sulphate of Potash	13.5
Silica	5
Earthy Phosphates, with traces of Carbonate of Lime, Magnesia, and Oxide of Iron ..	10.5
Water	4

100.

The Potatoes manured with soot were entirely free from the attack of grubs. Each trench was cut out about five inches deep, the manure was strewed along the bottom, slightly covered with soil, and the Potatoes, middle size, and whole, planted upon it nine to twelve inches from set to set, and from two feet to two feet six inches from row to row, being guided in the distance by the natural growth of the haulm.

The *Breadfruit*, *Shaws*, and *York Regents*, are good sorts. The *Kentish Goldfinder* is a good productive sort, mealy, but of a yellowish colour.

Planting Potatoes with a long dibble, which is very generally adopted, I consider a bad plan, as the pressure of the instrument hardens the soil of the hole through which the young, tender roots cannot penetrate so freely as in dug trenches. The sets to be exposed to the greening process, that is, to sun and air until they become green, and to be occasionally procured from a distance; as I have seen *Ash-leaved Kidneys* grown for many years in the same garden until they became misshapen monstrosities.

CABBAGES.—The *Varack*, *Fitch's London*, and *Battersea*, sown about the middle of March, and transplanted about the beginning of June, will be fit to cut in September and October.

PEAS.—The *Aurégne* produces, in favourable weather, an abundant succession of gatherings; height five feet. *Thompson's Pea* is a prolific sort; height, one foot-and-a-half, and bears the whole crop at once. Either one or the other, or both, may now be sown.—WILLIAM KEANE.

THE APIARIAN'S CALENDAR.—MARCH.

By J. H. Payne, Esq., Author of "The Bee-Keeper's Guide," &c.

THE WEATHER.—Little can be done in the Apiary during the present state of the weather; those persons who are fortunate enough to have a few stocks left after an almost unknown succession of bad seasons must watch them with unwearied diligence during the present and following month.

FEEDING.—Feeding must be carefully attended to; give honey in the combs where obtainable, where not, give barley-sugar.

SNOW.—My own bees have been confined to their hives thirty days, snow being upon the ground for that time. I am well aware of the ill effects of so long a confinement, but had they their liberty the case would be much worse, for the sun shining on the snow induces them to fly abroad, the snow then appears to attract them, and when they alight upon it, it is to rise no more. Where persons are so incautions as to omit confining their bees during snow, the ground in front of the hives on a clear, sunny day, may be seen studded with bees dead and dying.

BEES IN CONFINEMENT.—I hoped to have given some account of the state of my bees after their long confinement, but that must be deferred till next month, for they have not yet had their liberty, nor is there any prospect for it at present. I expect, however, that those in straw hives will be found to have suffered least, although those in boxes have been well ventilated.

EXAMINATION.—Immediately upon the disappearance of the snow, every hive should be carefully examined, and clean floor-boards supplied wherever the least dampness is observed.

CONSUMPTION OF FUEL IN THE ROYAL BOTANIC GARDENS, KEW.

My attention was lately directed to an advertisement of Messrs. John Weeks and Co., which is calculated to convey very erroneous notions of the consumption of fuel in our Palm-house; and, if true, showing us to be guilty of a most extravagant and unjustifiable use of the public money.

The object of Messrs. Weeks is to prove "the extraordinary efficiency and economy of their heating apparatus," and that, in their establishment at Chelsea, "it does more work with one boiler than is done by twelve boilers in the great Palm-house at the Royal Gardens of Kew." Then he proceeds to draw the following comparison:—

1. THE HOUSES AND PITS AT MESSRS. WEEKS AND CO.

Measure in length	1,000 feet
Superficial feet of surface covered	13,480 "
Surface of glass exposed to the atmosphere	16,000 "
Length of pipe to heat the whole	5,000 "

Fuel consumed in twenty-four hours during the winter months, at a cost of 3s. per day

The boiler requires attention only once in twelve hours, and then but for one hour; thus occupying a man but for two hours out of the twenty-four, at a cost of say 8d. per day.

2. THE GREAT PALM HOUSE, KEW,

Measures in length	355 (we reckon 362 feet)
Superficial feet of surface covered	23,900 "
Surface of glass exposed to the atmosphere 42,200—we say 45,000 "	
Length of pipe to heat the whole 15,000 feet—we say 17,158, besides 1,076 feet of tank.	

Fuel consumed in twenty-four hours during the winter months, being two parts coke and one part coal, at a cost of 4l. 16s. per day

The boilers, twelve in number, occupy the whole attention of two men daily, at a cost of say 10s. per day.

It should here be observed that, in the above calculations—inaccurate as we know them to be as concerns

Kew—the difference in height between Messrs. Weeks' small greenhouses and pits and the 66 feet of elevation of the Palm-house, along with the tropical heat of the latter as compared with the cool temperature of the houses in the Nursery in the King's Road, are facts altogether unnoticed.

Then follows the most astounding assertion:—"It results from the foregoing statements that the apparatus of Messrs. Weeks, with one boiler, is doing about as much work as four boilers do in the Palm-house; and that with three, or, at most, four boilers, such as Messrs. Weeks now have in use in their nursery, the great Palm-house could be heated at a cost, in fuel and labour, of 14s. 8d. per day, effecting a saving say of £1,095 per annum"!!

It is difficult to know the exact data on which Messrs. Weeks found their calculations. We will grant that they expend only 14s. 8d. per day during the winter months, in their nursery establishment, for fuel and labour. They cannot suppose that if it costs us "£5 6s. per diem for the winter months," as they express it, the same expenditure should go on throughout the year. Allowing then, for

The winter (six) months, at £5 6s. per diem	£967	0	0
Summer months (six), say one half	483	10	0
Cost for the whole year	1450	10	0
Taking Messrs. Weeks' mode on the same principle:—			
Six winter months, at 14s. 8d. per day	£133	0	0
Ditto summer	66	10	0
	199	10	0
	£1,251	0	0

By this calculation we are placed in a worse plight than by Messrs. Weeks' showing, to the amount of £156; for he reckons our loss in fuel and wages at £1,095 only. But let us come to facts.

ACTUAL COST OF FUEL AND LABOUR AT KEW.

The average yearly cost of fuel for the whole establishment for the last six years is	£756	0	0
Cost in 1846 and 1847, before the Palm-house fires were lighted, average for two years	394	0	0
Leaving for the Palm-house	£362	0	0

But since 1846 and 1847 the number of fires in the garden has increased considerably, in consequence of new structures, additional dwelling-houses, the Museum, and fires in the Herbarium rooms and Library; so that the Palm-house can in no way be calculated to average more than £300 a-year. Thus, then, say—

Fuel	£300	0	0
2 stokers	91	0	0
Night attendant for eight months	32	0	0

Total cost of Palm-house for fuel and labour.. £423 0 0

Can Mr. Weeks be serious in saying that we could, by adopting his principle of heating, save £1,095 per annum out of £423?

I am far from wishing it to be understood that with the experience we have now acquired we should not be able, had we another such structure to erect, to correct several grave errors, and to economise our fuel; but how a business man like Mr. Weeks could have fallen into such enormous errors and miscalculations as we have here endeavoured to rectify, and how he can tax us with such a gross misapplication of public money, I must leave that gentleman to settle in his own mind. Were it fair to suppose that he has made mistakes of an opposite character in his calculations, and in favour of his own case, the fact might turn out, after all, to be that economy was more practised and paid attention to in the Royal Gardens of Kew than at the Horticultural establishment in the King's Road, Chelsea. — W. J. Hooker, Director, Royal Gardens, Kew, Feb. 7.

SPEAKING of our advertisement, Sir William Hooker says, it "is calculated to convey very erroneous notions of the consumption of fuel in our Palm-house; and, if true, showing

us to be guilty of a most extravagant and unjustifiable use of the public money."

In a reply to this passage we shall merely observe, that on seeing it, we immediately wrote to Sir William Hooker, saying, "Whatever inaccuracies we may have been led into by incorrect information, we shall feel it our duty to set right in the next publication of the *Gardeners' Chronicle*, and we lose not a moment in expressing our sincere regret, that any statement of ours could be considered as conveying a charge against the management of the Royal Gardens, at Kew, or the administration of the funds devoted to its support by the country;" and that had we done so, or "intended anything of the kind, we knew well the attempt could only recoil upon ourselves."

It now rests with us to show upon what grounds our statement of the consumption of fuel at the Palm-house at Kew was made.

With the view of avoiding "enormous errors and miscalculations," with which Sir William charges us, we proceeded to the Palm-house, at Kew, in December last, and there received from the two men who attend the fires, the items of the consumption of fuel as given in our advertisements.

Our Mr. Weeks, as a practical man, went into the whole question of the heating of the Palm-house with both of the men, and saw no reason for supposing the information they gave him to be incorrect. Upon that information, our calculation of the expense attending the consumption of fuel was based. Our advertisement containing that calculation having appeared first in the *Gardeners' Chronicle* so far back as the 29th of December, and otherwise having been pretty extensively circulated, without its accuracy having been called in question until the 10th instant, we had, till then, believed that our statement was at least free from exaggeration; more particularly, as the information given us in December, would have warranted us in making out a larger expenditure of fuel than we put down.

Sir William Hooker's contradiction of our statement made it necessary that we should revisit the Palm-house, and therefore, our Mr. Weeks, accompanied by another practical man, went there on the 12th instant, when they obtained the following information from the men who attend to the boilers in the Palm-house. The men said, "The house is heated by twelve boilers, six on each side; we bring every day from the dépôt, eight truck or cart-loads of fuel; each cart-load contains nine sacks, all of which is consumed during the twenty-four hours. The fuel consists of one-half good coke, the other half good coals." This statement is corroborative of that made to Mr. Weeks in December last; and it requires but a very simple calculation to see, that according to it, there are seventy-two sacks of the mixed fuel consumed every twenty-four hours. We estimate the coke at about 1s. 2d. per sack, and the coal at 2s. 6d. per sack, and at these prices, the mixed fuel would cost about 1s. 10d. per sack, which would make the daily consumption of fuel to heat the Palm-house amount to about £6 12s. per day. We were further told on the spot, that this quantity of fuel was required for nearly six months each year; but in our calculation, we estimated the largest expenditure of fuel for four months only, and if we now assume that seventy-two sacks of mixed fuel, as stated to us by the men attending the boiler, is correct, but that that consumption is limited to four months instead of six, or nearly so, it would amount to

£792	0	0
If we then reduce the consumption for the next four months, say by one-third, we find the expenditure amount to		
528	0	0
And say half that again for the four summer months		
264	0	0

Making the annual consumption of fuel for heating the Palm-house amount to

£1584 0 0

We have now stated where we obtained our information, and how we have made our calculations, and can only say, that if we are guilty of "enormous errors and miscalculations," we hope Sir William Hooker will think as we did, that it was very natural we should have placed credence in the statement made to us on the spot by the very men who supply the furnaces daily with fuel; and who, being

perfect strangers to us, had, we imagine, no reason whatever in deceiving us with false information on two separate occasions.

Sir William, in his statement, observes, that "the object of Messrs. Weeks (referring to our advertisement) is to prove the extraordinary efficiency and economy of their apparatus," and that at our establishment at Chelsea, "it does more work with one boiler than is done by twelve boilers in the great Palm-house, at the Royal Gardens of Kew."

This, we must respectfully observe, is a misquotation. Our statement was, and we see no reason whatever for altering it, that "the apparatus of Messrs. Weeks, with one boiler, is doing about as much work as four boilers do in the Kew Palm-house," and that "the great Palm-house, at Kew, could be heated at a cost, in labour and fuel, of 14s. 8d. per day." And we are still of opinion that we are not far wrong.

Again, Sir William Hooker says, "We will grant that they (meaning Messrs. Weeks) expend only 14s. 8d. per day, during the winter months, in their Nursery Establishment, for fuel and labour." Now, we made no such statement; we repeat, that we heat the whole of our Nursery with one boiler, and that in fuel and labour we do not expend more than 3s. 8d. per day.

During our visit to the Palm-house, on the 12th instant, we perceived that the twelve boilers, and they certainly were well supplied with fuel, only got the temperature up to 60°. Now, our one boiler, circulating the water through 5000 feet of pipe, will give us not less than 60°, in any of our houses and pits, whilst the hotheouses will have a temperature of between 70° and 80°.

Sir William Hooker, in his concluding observations, asks, "How a business man, like Mr. Weeks, could have fallen into such enormous errors and miscalculations," and "How he can tax us with misapplication of public money, I must leave that gentleman to settle in his own mind." On this we must remark, that we sincerely hope Sir William Hooker is the only person who has so interpreted any passage in our advertisements. We are unable to put that construction upon any line we have written. No doubt, it was intended to be as economical as possible in heating the great Palm-house, and no doubt, not one pound of fuel more than is necessary, is, or has ever been, consumed there; but still, it may be quite possible that with other and different boilers than those in use in the Palm house, a far greater economy might be obtained than Sir William Hooker has any idea of. This is all we ever said, or intended saying, and we fully trust this explanation may be satisfactory to Sir William Hooker, as respects the true meaning of our previous statements, although we must confess, that our recent efforts to discover from the firemen at the Palm-house where and how we had been led into error by what they told us in December, have been unavailing; and how to explain the difference between the statement of Sir William Hooker, that the cost of heating the Palm-house "can in no way be calculated to average more than £300 a year," and the statement of the firemen, that the "twelve boilers consumed seventy-two sacks of mixed fuel each twenty-four hours," is certainly more than we can pretend to do.—J. WEEKS AND CO.

QUERIES AND ANSWERS.

GARDENING.

STOCKING A FLOWER-GARDEN UNDER ADVERSE CIRCUMSTANCES.

"Will you please help me? My garden, from year to year, is little better than a wilderness, and I am so disappointed and annoyed to see nothing but straggling Escholtzias, badly grown Geraniums, and stunted old Roses, that in a fit of desperation, I am determined to let the two gardeners (who, by-the-by, grow Cabbages to perfection,) confine themselves to the kitchen and fruit department, whilst I, with a boy, undertake the whole of the flower-garden. I want it to look gay this summer, but not one of the cuttings taken by our men in the autumn have outlived this winter. I am, therefore, thrown entirely on my own resources, and have not the tenth part required to fill the beds; but I have an abundance of stubby, scrubby plants, Verbenas, Geraniums, Heliotropes, &c. I know next to nothing about gardening.

I only began taking in THE COTTAGE GARDENER on the 2nd of January, and I cannot afford to buy up the back volumes, which perhaps would help me; so I shall be greatly obliged if you will kindly give me the information I desire. The garden is chiefly lawn, and the beds, though designed some twenty years since, are not so bad. I have made a plan in my day-book, noted carefully the numbers of each plant I shall require; but if I carry it to either of our unfortunate gardeners, alas! I shall be told that my schemes are impracticable, and that if I want nice bedding plants, I must either buy them, or wait another year, &c.

"Now, I have at command a tolerable greenhouse, three light frames, my aforesaid scrubby plants, lots of old pots, and good mould to my heart's desire. I want beds of Tom Thumb, Scarlet and Purple Verbenas, Petunias, Fuchsias, Calceolarias, Zinnias, Balsams, &c. Is it too late to begin to set to work to have nice young plants for turning out the end of May or beginning of June? and can I not now buy some new kinds, and strike from them for the greenhouse, vases, stands, &c.? and what kinds would you advise me to get? Am I to water my cuttings? What seeds shall I sow, and when? The beds are made rich, as we have plenty of dressing at command. The borders and shrubberies are poor as poor can be; I never could raise anything in them but Mignonette, and weak straggly things that I am ashamed to see. Do any of your old numbers refer to a case as desperate as mine? If so, I will only trouble you to name them; but if not, and you can find time to answer my queries, you will greatly oblige.—VECTIS."

[Your case is only one out of many, but your determination, as far as words go, is that of one out of a thousand. You are going to do the flower-garden yourself, with the assistance of a boy. You confess you know little about it, which is a great deal, for we usually find the most incompetent putting the saddle on every horse but the right one; all your stock is gone, except the old scrubby plants; and you have just begun to take in THE COTTAGE GARDENER.

Now is just the right time to tell you, and such as you, the real truth. You may succeed in pleasing yourself this very season, and if you do you will be more fortunate than one in a score; but the "real truth" is this, that there is not a man on earth, and but very few women, who could accomplish what you aspire to in one season, beginning on the first of March; that is, one who is, at this advanced season of the year, "thrown entirely on his own resources," "who knows next to nothing about gardening," and who has lost all the cuttings made last autumn. We have no greenhouse, no frames, no leaf-mould, or no good mould at all; but all our Verbenas (two plants), all our Calceolarias (four plants), our Fuchsias (about a dozen plants), and about 2000 Geraniums, are all in as good health as any in Her Majesty's dominions. But we were thrown on our own resources entirely, and those resources consisted of facts and failures, tumbling over each other, through forty years of active experience, and from these we have arrived at the "real truth," that no one can learn so much of gardening, from all the books in the world; in three months, as to be able to provide for, and plant a small flower-garden in that time. By telling this truth at the first start we shall be more likely to stamp our impressions on the reader as we go on. The first impression is that greenhouse Geraniums should never be increased from cuttings after the middle of February, or in the spring at all, except it be very rare kinds. All bedding Geraniums may be propagated in the spring, and some of them ought to be so propagated, and at no other time; but all the common Horseshoe or Scarlet breed ought certainly to be propagated in the autumn, as, although they strike faster in the spring, in a hotbed, they are not nearly so economical, as three plants from spring cuttings will fill the place of one plant only of the autumn struck. All the Verbenas, all the Calceolarias, all the Petunias, all the Heliotropes, all the Lobelias, and such like, will do best from spring cuttings, except that old Calceolarias are very useful for the middle of beds; but young spring plants of the Sultan Calceolaria, which is a dark one, and of Amplexicaulis, the best sulphur-coloured one, are fully as good as plants made of them last autumn; all the rest of the best bedding kinds of Calceolarias ought to be propagated in October. All seedlings, as the Zinnias and Balsams you enquire about, are better from spring sowing. With these general impressions, we put you into

the hands of Mr. Beaton, who was on the point of resuming his A B C instructions in gardening; he may probably put you in the spelling class; at any rate, we leave you in his hands; but, by way of evening class, we would suggest that the rest of his pupils should be equally attended to meantime.]

HEATING A GREENHOUSE FROM A PARLOUR FIRE.—HOLLYHOCK SEEDLINGS BLOOMING THE FIRST YEAR OF SOWING.

"Pray accept my best thanks for your very kind reply to my large demand for information respecting greenhouses (p. 352). One other point with reference to the subject I should feel obliged by mention in your 'Answers.'

"My greenhouse will be at the end of my house, and a door will communicate between the greenhouse and an occasional sitting-room. Can I, to save fire, make use of that in the sitting-room to heat a boiler for supplying the hothouse and greenhouse? And will it be likely to prove injurious if I have the back part of the fire-place and chimney thinly bricked (carefully, of course, to exclude noxious air, &c.), in order to allow some heat to be given by that means?

"A correspondent asked, a few numbers back, if it were possible to flower *Hollyhocks* the first year. You thought not. Last year, however, I did. I sowed some seed in January in a hotbed, and kept the plants growing till May, when I put them out, and in September three of them flowered. I do not advise this unless he, as I did, wanted to know the colours.—W. F. G."

[There will be no difficulty in having a little boiler in the sitting-room, provided the pipes in the greenhouse are higher than the boiler—say a foot or eighteen inches. You might also manage to have a damper in the chimney. We presume the fire-place is at the end of the house, and the greenhouse on the other side. In such circumstances, an iron plate would be better than bricks; but either would give you a considerable amount of heat. In a previous volume, Mr. Fish described a whole series of greenhouses in a row of houses, the heat from the kitchen fires of which was sufficient to keep all common greenhouse plants over the winter. Two pipes from a boiler at the fire-place would be an additional security. For places of any size it is better to heat them separately, independently of rows, as in cold weather you might be obliged to heat the row when you did not want it, though much might be done by a damper in the chimney, and enclosing the fire-place, so as merely to have an opening for draught.]

HEATING GREENHOUSE BOILERS BY GAS.

"In the number of *THE COTTAGE GARDENER* for the 9th of January, I see an article, by Mr. Appleby, on the subject of heating greenhouse boilers by gas. As an improvement to the plain jets acting on the boiler, I would recommend that the gas be allowed to pass through wire gauze, before ignition. It will then burn on the surface of the gauze, with a lambent, but very intense heat, owing to the wire being heated, and thereby causing the entire consumption of the gas.

"Can Mr. Appleby obtain from any of his friends, who have tried heating by gas, how much gas was consumed per diem, giving at the same time the size of the house, and the height outside and in?"—G.A.

"P.S.—The gauze should not have too large a surface, say half to three-quarters-of-an inch in diameter; else the flame will flicker, or run from one place to another, and great loss of heat will be the result."

[Mr. Appleby sent an enquiry to Mr. Catling, Curator of the Birmingham Garden, respecting the quantity of gas used per diem in heating the conservatory belonging to J. Rateliff, Esq., Wyddrington House, Edgbaston, and has received the following answer:—

"The conservatory is 70 feet long, 12 feet wide, 13 feet high in front, and 17 feet high at the back. The boiler is heated by nine one-jet burners. The house is in a very exposed, high situation. On the morning of the 14th of February last, the thermometer inside indicated 40° Fahrenheit, and outside 19°, at 7 A.M. Mr. R. has no means of ascertaining the quantity of gas consumed per diem, having no meter, neither can he form an approximate estimate.

"What does 'G. A.' mean when he says the gauze should not have too large a surface, say half or three-quarters-of-an inch? it surely cannot be gauze with apertures half-an-inch across?"

"Mr. R. will make some further alterations in the spring, and is aware of the gauze being beneficial."

This is, as far as it goes, a very satisfactory answer; it clearly shows that gas used to heat a boiler outside the conservatory is quite sufficient to keep out frost, especially when the exposed situation of the conservatory, its great height and length, is considered.

"G. A." will confer a favour if he will more fully describe the size in diameter, and size of the mesh of the gauze he recommends. We should be glad also if Mr. Catling will send us an account of the improvements he alludes to when they are effected.]

LUCCA BROOM—SOWING FERN SPORES.

"I beg to ask if you know a plant by its popular title of *Lucca Broom*? as I am apt to throw things away when I cannot make out their proper name; and Loudon's '*Hortus Britannicus*' gives me no clue to it whatever; and I should be obliged if you would just add how I must sow the seeds of Ferns to have a probability of success.—M. H. LEE."

[The *Lucca Broom* is, we think, the Spanish Broom, *Spartium junceum*. You should have said where you got it from, and sent a seed. Sow a few in a pot, in a cold frame, in April. You will see then what they are.

The way to raise Ferns from seed has been often described in *THE COTTAGE GARDENER*, but as you may not possess the parts containing that information we will briefly repeat it.

To cause Fern seed to vegetate, a close, quiet atmosphere is necessary. To attain this, take a shallow, wide garden pot, drain it well, and fill it with very sandy peat mixed throughout with small pieces of sandstone. Give a good watering, and as soon as the water is settled brush off the seeds (spores) from the fronds thickly over it. Then fit a bell-glass to the pan and place it upon it. Do not remove it till the Ferns have appeared; shading well from the sun. To keep the soil moist water over the bell-glass frequently. If the soil is watered ever so gently the seed will be washed away. If you wish to be very particular you may scald the surface-soil to destroy the wild Fern seed that may be amongst it; but the scalded soil must be dried previous to using.

If you have no bell-glass do not fill your pot quite full, and place a square of common flat glass upon it, turning it every morning to dry off the condensed moisture. This will answer, but not so well as the bell.

As soon as the young Ferns have made their second frond pot them off, putting three or four at equal distances close to the sides of a three-inch pot. Place them under a hand-glass till well established, when they may be potted off singly, and treated in the ordinary way.]

LISIANTHUS RUSSELLIANUS CULTURE—GENTIANELLA FAILING.

"I have a little seed of the *Lisianthus Russellianus* from Mr. Cullingford, and am at a loss how to cultivate it. I think it is not in *The Cottage Gardeners' Dictionary*, unless under a different name. I suppose the plant was brought here from Mexico; and was found growing in the brush-wood, by Mr. Russell.

"There is, also, the common blue *Gentianella* that I am beat by. It flowers beautifully in the more elevated gardens in this neighbourhood. I have tried plants of it for several years, but have never been able to get the plants to grow at all, never to speak of flowering; they have always remained at a stand-still for about two years, and then died. The soil is a pretty strong dark loam, and the place pretty well sheltered.—F. B."

[You will find the name and culture of this beautiful *Lisianthus* the last on page 557, in *The Cottage Gardeners' Dictionary*. It is profusely written about in *THE COTTAGE GARDENER*, and more than once; but you must turn over and find it for yourself; what is got too easily is easiest forgotten. The plant is from Mexico; but as you only "supposed" it was, and by Mr. Russell, we shall put you right. In the first place, Mr. Russell never went to look for plants at all. He has been writing for the *Times* these many years; always went with the Queen to Ireland and Scotland. Do you not recollect

his account of the "tempest," when Her Majesty was nearly lost on her way to Scotland from Erin? He is now before Sebastopol; but we can put you on the right scent, nevertheless. This *Lisianthus* was discovered by the unfortunate Drummond, after whom *Phlox Drummondii*, and other plants are called; he was from near Duudee, in Scotland, we believe. It was named after the late Duke of Bedford by Sir W. J. Hooker, who gives the following memorandum:—"It was shortly before the period of the arrival of those seeds and specimens that His Grace the Duke of Bedford, with his wonted liberality, contributed a sum of money, which, had the receiver continued in health, would have materially assisted in forwarding his views in Florida, but which was no less available in a period of pain and sickness immediately preceding his lamented death in Cuba; and I am sure that, in dedicating this splendid plant to so distinguished a patron of science, I shall have the approbation of every botanist, and of every lover of horticulture. I think," he continues, "there can be no doubt but, under proper management, by forcing in the early spring, and planting out in the open border, this plant will there perfect its flowers as readily as the *Phlox Drummondii*." Here we see a proof of the fact that the best of us, and the highest authority among botanists, can, at best, give but a rough guess as to the management of any new plant whatever. Sir W. Hooker had the best practice in Scotland at his elbow when he penned his "proper management" of this *Lisianthus*; yet we have such confidence in each other, that we seldom depart from first suggestions till we utterly fail, and when we do fail, we never blame the first adviser, as some foolish people do, who do not know better. For the next two or three years after the above was written in Glasgow, *Lisianthus Russellianus* was repeatedly lost in England; no mortal could grow it according to the rules given; they even lost it, or all but lost it, in the Glasgow Botanical Garden; and were it not for the spirit with which it was experimented upon at Bothwell Castle, it would certainly have been lost altogether before any one knew how to grow it. Meantime, and for the next three weeks, is the right time to sow the seeds, and if you cannot find out the accounts of how to manage it in THE COTTAGE GARDENER, write again, and we shall take the trouble ourselves of looking over the indices.

As to the common blue *Gentianilla* (*Gentiana acaulis*) our advice is short; give it up; and take our word for it, that all the gardeners in England, Ireland, and Scotland can never make this plant grow and bloom to satisfaction in a place where it has failed so often. We have tried it in all ways, against hopo, for ten long years, and we can offer you no better advice. If you were desirous to grow sugar or tobacco, or even wine, in your garden or grounds, would you not be pleased with a friend's advice, who told you that you could not succeed? Of course you would. Well, then, add this to the "many benefits" you now acknowledge, and be thankful.]

TO CORRESPONDENTS.

OUR BACK VOLUMES AND NUMBERS (*A. Booty*, and *J. R.*).—You can have any you require by applying to Messrs. W. S. Orr and Co., Amen Corner, Paternoster Row. They are about 13s. per volume. *Many will soon be out of print, and will not be reprinted, so that parties wishing to complete their sets should apply immediately.*

HOGG'S BORDER TILES (*J. Le Dieu*).—There is so much difficulty in having them manufactured properly, that we believe Mr. Hogg has ceased from having them prepared.

NORTHUMBRIAN BASKETFUL RASPBERRY (*S. W.*).—We do not know this variety. Can any of our readers state what they know about it?

IMPROVING AN ORCHARD (*A. M., Derby*).—We cannot advise you until you let us know the nature of its soil and subsoil. Probably it needs draining.

HEN WITH TWISTING NECK (*Claude*).—A small blood-vessel has burst upon the brain, and caused partial paralysis. Keep her upon barley-meal, with plenty of green food, and if she becomes broody let her sit. By this low diet and quietude we recovered a hen similarly affected.

PANNELL'S STOVE (*D. Galben*).—We have heard from several gardeners who use it that it answers very well. He should advertise it again. This is the third enquiry we have had.

DEVONSHIRE (*H. W.*).—We shall be glad to have notes upon the plants and novelties you saw, but rhapsodies on the climate are not useful.

HOPS (*E. Hawley*).—You will see an article, by Mr. Robson, in our paper of to-day, which will give you every information about preparing the ground, and planting the Hop plant. Mr. Robson will again allude to the subject; and as he is in the centre of the great Kent district, he will have had ample opportunities of witnessing everything connected with them.

BAKER'S RASPIGS FOR FOWLS (*A Working Man*).—If much burnt there is but little nourishment in them, otherwise, mixed with pollard,

we think they are useful. We do not believe the colour of egg-shells is ever changed by an alteration of the hen's food. The Silver Hamburgs are not profitable anywhere. You will see what has been recently said by practical men on the profitable keeping of poultry.

CALENDAR FOR MARCH.

FLOWER-GARDEN.

ANNUALS (Tender), such as the *Portulaccas*, *Mesembryanthemums*, *Lobelias*, &c., sow, b.; (Hardy), sow on dry borders, b. and c.; finish transplanting autumn-sown annuals. BIENNIALS, sow, c. CLIMBERS, half-hardy, as *Maurandya*, *Lophospermum*, &c., pot and train, b., to have strong for next May planting. CUTTINGS; push on the propagation of cuttings, and transplant them as fast as they root. CUTTINGS from *Rose* prunings, plant in the shade. DALLIAS, sow, and force old roots for stock, b. DRESS every part within the boundary as early as you can. ENGINES of all sorts finish off as early as possible. ALL EVERGREENS transplanted since last August may have liquid-manure this month, and throughout the season after this mild winter. FLOWERS, pick off from plants you want cuttings from, h. Finish all the PLANTING and SPRING PRUNING of trees and shrubs, and all necessary alterations, as soon as the weather will permit. GRASS, and white and small yellow CLOVER SEED, sow with a liberal hand over patchy grass; keep the grass in clean, trim order, and roll it three times this month, and oftener if you can. GRAVEL, clean, roll, and relay. HANN-GLASSES are the best of all aids to rear half-hardy, and such other annuals as come up weakly at first, place them on a warm, sheltered aspect. HOEING; never hoe a border in March, for fear of killing something which you cannot see. HORNS are only good helps to those who can well manage them for the flower-garden; keep them up to 70°, and steady. HYACINTHS, and other BULBS, as soon as they appear, stir the beds, and lighten the soil round the plants; and plant spring GLADIOLI at once. PERENNIALS, with the exception of long fleshy-rooted ones, ought to be removed—divided, if necessary—and receive some fresh soil, or be planted in new situations, at least every third season; see to this rule, and treat one-third of each family, every February and March, according to it. PROTECTION is necessary for almost all young things of a tender nature this month. RAKES, lock them up, b.; if your man cannot dress a border without a rake, tell him he must learn. ROSES, finish pruning, b., except, perhaps, a few strong ones may be left unpruned till April, to bloom later; but this plan is radically bad and not necessary now with our perpetuals. SEEDS, do not sow a packet of rare seeds in one pot only, sow in two or three pots, to provide against accident to one. SEEDLINGS in heat, transplant as soon as you can handle them. STAKES; see if you have a stock on hand for your Dahlias, Hollyhocks, and all other plants requiring them next summer, and see that all the old ties and rotten stakes are out of the rosary. SWEET BRIAR, sown in a single row, will grow and make a hedge in such poor soil as would kill other Roses. TURF, lay. D. BRATON.

FRUIT-FORCING.

AIR, increase as forcing proceeds. APHINES, destroy. CUCUMBERS, in forcing-house, apply liquid-manure, train and stop when long enough; in frames, turn and remove linings weekly, stop frequently; temp., 65° to 75°. CHERRIES, use moderation; keep a humid air; temp., 50° to 60°, artificial heat; ventilate freely. FIGS, such as *Peaches*; keep the root moist; bottom warmth benefits them. LIQUID-MANURE, apply to active growths where strength is required. LEAVES of all fruits keep clean. MOISTURE (AIR), supply liberally; root moisture regularly, but according to need. MILDEW, beware of; see *Sulphur*. PEACHES and NECTARINES, keep a free atmosphere; disbud and train; temp., 55° night, 65° to 70° day. PINES, liberal heat and moisture to rising or swelling fruit; successions, re-arrange and increase temperature. RED SPINER, see *Sulphur*. STRAWBERRIES, introduce successions, water liberally, keep near the air and light. MELONS, bottom-heat 75° to 80°, air-heat 70° to 80°; thin the Vine well. SULPHUR, apply at least monthly in all structures. TEMPERATURE, allow 8° or 10° advance in heat during sunshine. VERMIN, entrap. VINES, early train, stop, thin berries, tie shoulders; do not forget the sulphur. WATERING, attend to daily. R. ERRINGTON.

FRUIT-GARDEN.

APRICOTS, protect; search for the eggs of the Red-bar Moth, like parsnip seeds, and dotted. APPLES, cleanse, brine and soft soap, succeeded by spirits of turpentine in the retreats of the American blight. BLOSSOMS, retard and protect. BUSH FRUIT, still plant or top-dress. FIGS, uncover, prune at end. GRAFTING, proceed with. HOEING, practice on foul borders. NUTS, hang male catkins among the female blossoms. PLANTING of all kinds instantly bring to a close. PEACHES and NECTARINES, finish training, retard and protect; dress the walls with sulphur paint. Raspberries, still plant, prune, stake, and top-dress. ROOT-PRUNING may still be done. SUCKERS, destroy. STRAWBERRIES, spring-dress; transplant. STANDARDS, stake. STOCKS, plant or sow seeds. TRELLISES, dress and protect. VINES, plant at end. WALNUTS may be planted still. In grafting, proceed according to the degree of development of the bud, taking each kind the moment the buds actually begin to expand. R. ERRINGTON.

GREENHOUSE.

AIR, admit in fine weather, when the outside temperature is above 35°; a shut house is better than cold currents and night fires; in foggy weather, however, light a fire, to clear and dry the atmosphere. BULBS and TUBEROUS roots, introduce, and water more freely; start the various kinds of Achimenes, Gesnera, and Gloxinia, in hotbed; seeds of the latter, sown now, will give nice little flowering plants for the autumn and winter, if you can give them heat. CALCEOLARIAS and CINERARIAS, water more freely; give manure-water to those flowering and showing their flower-stalks; shade in sunny weather; shift for succession. CAMELIAS and AZALEAS, water more plentifully when in bloom; keep those intended for late blooming as cool and shaded as possible, so that frost does not injure them. DIOSMA, EPACRIS, HEATHS, give abundance of air when growing and flowering; Prune freely when done

flowering, and keep close until they begin to grow, when the roots had better be examined. Now and afterwards, for a couple of months, will be a good time for inserting cuttings. *HABROTHAMNUS ELEGANS* is now a pretty object grown in a pot, or trained against a pillar. *HORTENSIA*, prepare for sowing *Primula* seeds, and any other desirable greenhouse plants, raising cuttings, sowing seeds, or striking cuttings of the commoner sorts for stocks on which to inarch or graft *Correa*s, *Oranges*, *Camellias*, &c.; the grafting of such plants is easily effected in such a sweet, moist hotbed, and does away with much of the trouble of inarching. Such a bed will, also, be necessary for starting *Cockseeds* and *Balsams*, &c. Strong, early, winter-flowering *PRIMULAS* should be sown the end of this month; and *CINERARIAS*, intended for the same purpose, the month following. *INSECTS*, destroy. *LEAVES* and *STEMS*, clean: a little soap and water is a great auxiliary for removing all kind of filth; syringe with clean water afterwards. *LILIES*, *JAPAN*, after the stems appear, place in a light, airy situation. *MIGNONETTE*, and tender annuals, sow in slight hotbeds, in pots, turf, &c., to be afterwards hardened off. *SOIL*, prepare, turn, and expose for a general shifting about the end of the month; but do not knock about fresh soil intended for potting, so as to shake the fibre out of it. *PRIMULA SINENSIS* will be greatly benefited by manure-water. The double varieties are well worth a little extra attention, as the flowers stand a long time in a bouquet. *TRAIN* large plants of *PELAGONIUMS*, intended for early flowering; *STOP* those for late summer and autumn. *SCARLET GERANIUMS*, intended for specimens in pots, give good shifts to, and if they can get a little bottom-heat, they will come all the stronger and bloom the finer. Tie climbers to rafters, after duly pruning them, keeping in mind whether the flowers are produced on young or old wood; train daily those on trellises; and as the season is now getting on, let neatness, order, and cleanliness, everywhere prevail. *WATERING* will now be more wanted, and a moist atmosphere in clear weather, to counteract the drying effects of east winds. *SYRINGING* the leaves with tepid water, after a sunny day, is as good for a plant as soap and water is for our own skins. Unless in extreme cases, fire-heat will not be so much wanted. Old *Scarlet Geraniums*, stored past, should now be brought into the light, top-dressed, &c.

R. FISH.

ORCHID HOUSE.

AERINES, and other similar Indian plants, will this month be growing rapidly; give them fresh sphagnum, if in wire baskets: if in wooden ones, renew them, and bring the roots within the baskets amongst the fresh sphagnum. *AIR*, give more abundantly as the days lengthen, and the sun obtains more power. *BLOCKS*.—The plants on these must be syringed twice a-day, at least, as they will now be growing rapidly. *BASKETS*.—Dip these in the cistern twice a-week; if very dry, allow them to remain in the water an hour or so, till the hard lumps of peat are thoroughly wetted. *BARKERIAS*, set to work, by giving water freely. *Pot CATASETUMS*, *CYCNOCHES*, and other similar-habited plants: they will now be growing. *DENROBIES*, see last month. Such as are in flower remove, if possible, to a cooler house. they will then last much longer in bloom; those growing repot. *HEAT*, towards the end of the month bring up to the maximum. *Indian House*, 80° to 85° by day, 70° by night. *Mexican House*, 70° to 75° by day, 60° by night. The highest heat to be when the sun shines. *INSECTS*, keep a watchful eye upon, and destroy the moment they are perceived. *MOISTURE IN THE AIR*, keep up a large amount of, by keeping the walks, platforms, and walls frequently flooded. *POTTING*, proceed with, and finish before the end of the month. Now is the time to increase *Orchids*, by division or otherwise. *SHADING*.—About the middle of the month place the shades upon the roof to be ready for use, as the sun will soon be so powerful as to be dangerous. *STANDPOLES*, now growing, put in fresh compost in large baskets. *STEAM*, where possible, admit amongst the plants. *WATERING AT THE ROOT* must now be regularly given, but care taken that it does not lodge upon the leaves or in the hollow of the young shoots.

T. APPELEY.

PLANT STOVE.

ACHIMENES advancing in growth give water to, but do not flood them in this early season; repot such as have filled their pots with roots; pot a batch to succeed the former ones. *AIR*, give now freely in mild weather; take care the apertures for the admission of air are not exactly opposite the plants, it is better to come over the pipes or flues, to be heated before it reaches the plants. *AMARYLLIS AULICA*, and varieties, repot, and place in heat. *APHELANDRAS*, repot. *BASKETS*. Place in these *Eschynanthus*, *Achimenes*, some *Lycopodiums*, and other hanging-down plants; they ornament the stove greatly. There are some baskets made of coloured glass that are very ornamental objects, filled with proper plants. *CLIMBERS* will now be growing fast; attend to training and thinning shoots; in pots place fresh trellises to, and keep the plants constantly trained around them. *CUTTINGS* continue to put in; pot off such as have rooted. *HEAT*, increase to 70° by day, 60° by night; winter-blooming plants gone out of bloom cut in severely, and place in a cool house to rest. *IXORAS*, repot, stop, and tie out; place them in a frame heated with dung; here they grow rapidly, and soon make fine plants. *INSECTS*, continue to watch for and destroy. *POTTING*, finish the spring, by the end of the month. *SYRINGE* freely morning and evening, and keep the paths flooded in sunshine. *WATER* will now be required in large quantities to fast-growing plants. Let the walks be frequently washed out, and every yellow leaf removed, every plant neatly tied, and decaying flowers removed as they occur. *T. APPELEY*.

FLORISTS' FLOWERS.

ANEMONES, double, protect from frost. *AURICULAS* and *POLYANTHUS* will now be showing their flower-stems. In this stage they will require constant attention. *Top-dressing*, if not done, must be finished the first week; water regularly in pretty liberal quantities; if allowed to flag now the blooms will be small. Give plenty of air daily, and shade from bright sun towards the end of the month: cover up securely at night whenever there is the least appearance of frost; sow seed, and pot last year's small seedlings to encourage growth. *CALCEOLARIAS*, repot, prick out seedlings, give plenty of air to, and smoke frequently with tobacco. *CARNATIONS* and *PICTURES*,

put into their blooming pots. Search the soil over minutely to find wireworms, and destroy them previously to using. Place them when potted upon a bed of coal ashes, with a convenience of hoops and mats to shelter them from severe weather. Should mildew appear, dust with sulphur; and destroy green fly with tobacco-water or Scotch snuff. *CINERARIAS*, finish potting, b.; smoke frequently to destroy every green fly soon as it appears; water freely, and shade from bright sun as the flowers open. *CHRYSANTHEMUMS* pot off into small pots and repot, b. in a size larger. *DAHLIAS*, all intended to be potted should now be done; pot off cuttings as soon as rooted, and put in more cuttings if required. Divide the old roots, leaving a bud or two to each division; place each division in a pot, and allow them to grow slowly till planting time; a cold frame, well protected from frost, will be shelter enough for them. *FUCSIAS*, repot; cuttings may yet be put in. Begin to train early, in order to form well-shaped plants. *HYACINTHS*; tie the flower-stems to sticks, to prevent the winds from breaking them off; continue to shelter the bed by hoops and mats. *HOLLYOCKS*, plant out where they are to bloom; place a mulch of short litter round each plant. *PANSIES*, top-dress; in pots, lay down the shoots round the plant, cut the stems half through to induce roots; shelter from heavy rains and severe frosts. *PELAGONIUMS*, pot young plants; top-dress old ones, and tie out to form large, spreading specimens; smoke frequently, to destroy green fly; when the flower buds appear, give liquid-manure every third time watering. *PINKS*, top-dress, b., if not done last month. *RANUNCULUSES* may yet be planted, h.; shelter the bed from heavy rain, frost, hail, or snow. *TULIPS* will now be growing fast; shelter the young plants from heavy rain, or other severe weather; if rain falls during the day, and a sharp frost intervenes at night, and no protection is given, the young leaves will be much injured. *VERBENAS*, in pots for exhibition, repot, tie out, and nip off the tops of the shoots; shelter both these and those intended to plant out from frost; smoke frequently to keep down green fly, and syringe occasionally with sulphur-water to destroy or prevent the red spider; put in cuttings of scarce sorts; sow seed; look for slugs constantly in the frames under the pots, or any other lurking place, and destroy them. Finish planting *ROSES*, and place those in pots in a warm house, to be coming on for the June or July exhibitions.

T. APPELEY.

KITCHEN-GARDEN.

This is a busy month—every day brings its work; a favourable opportunity should never be lost for doing any particular kind of work; take advantage of open mild weather for every kind of planting; in taking up transplanted plants from nursery beds of any kind, or at any time, always lift them up with some kind of tool or other, as a plant thus transplanted always suffers so much less than a plant drawn from the seed-bed. *ANGELICA*, sow, or plant, e., autumn-sown. *ALEXANDERS*, sow, m. or e. *ASPARAGUS*, sow or plant, e.; and dress off out-door beds; attend to that in forcing, water with liquid-manure once a week. *ARTICHOKES* and *BALM*, plant. *BASIL*, sow a little for early use. *BEANS*, plant; and earth-stir growing crops. *BET* (Red), sow a little for early use. *BORAGE*, sow, and earth-stir autumn-sown, and thin out. *BORECOLI*, sow, m. *BROCOLI*, sow a little of the early kinds, and mark any favourite kinds for seed. *BURNET*, plant or sow. *CABBAGES*.—Any early kinds may be sown, or *Red Dutch*, should plants be wanted. *CAPSICUMS*, sow, to forward in hotbed, b. *CARNOONS*, sow, e., for first crop. *CARRAWAY*, sow. *CARROTS*, sow for early crops; attend to thinning-out those in growth, and earth-stirring; sowings of the Early Horn may still be made on gentle hotbeds. *CAULIFLOWERS*, plant out the winter-protected; attend to spring-sown, as to airing, pricking-out, and earth-stirring; also assist the early hand-glass crop with sowings of liquid-manure, &c.; and sow in succession, e. *CELERIAC*, sow. *CELERY*, sow main crop, m., and prick out early-sown on gentle hotbed; leave for seed. *CHAMOMILE*, plant. *CHERVIL*, sow; save seed from autumn sown. *CHIVES* may be divided, and planted out. *CLARY*, sow, e. *CRESS* (American), sow. *COMPOSTS*, prepare. *CORIANHER*, sow. *CORN SALAD*, sow. *CUCUMBERS*, ridge out; pot off; or sow in succession; sow also toward the middle of the month, for planting-out under the hand-glasses next month; attend to those in bearing; keep up a good moist heat. *DILL*, sow or plant. *EARTH-STIRRING*, attend to in all cases, and often. *FENNEL*, sow or plant. *GARLIC*, finish planting. *HOBING*, attend to in dry days. *HOREHOUND*, plant or sow. *HORSE-RANISH*, finish planting. *HYSSOP*, sow, or take up and divide old roots. *JERUSALEM ARTICHOKES*, finish planting. *KINNEY-BEANS*, sow in succession; attend to those in bearing, assist them with liquid-manure. *LEeks*, sow. *LETTUCES*, sow; prick out; and plant out. *MARIGOLD*, sow. *SWEET OR KNOTTED MARJORAM*, sow a little for early use. *MARJORAM* (Common Garden), divide and plant out. *MELONS*, sow in succession, and ridge out; attend to earthing-up, training, &c., the early crops. *MINT*, plant. *MUSHROOM-BEDS*, make, and attend to; assist old beds with a little tepid manure-water. *MUSTARD* and *CRESS*, sow, once or twice a week. *NASTURTIUMS*, sow, e. *ONIONS*, sow the main crop; plant for seed, b.; also finish planting the *Underground* or *Potato Onion*; also the *Tree Onion*; and look over those in the store. *ORACH*, sow. *PARSLEY*, both kinds, sow. *PARSNIPS*, sow, b. *PEAS*, sow in succession; the beginning of this month is a good season to sow any of the tall kinds; earth-stir, or earth-up, and attend to sticking, &c. *PENNYROYAL*, plant. *POTATOES*, finish planting, either in hotbed or open quarter. *RADISHES*, sow in succession; attend to thinning-out young crops. *RANPION*, sow. *RAPE*, sow common, and edible-rooted, e. *RHUBARB*, sow or plant, b. *ROCHANBOLE* and *ROSEMARY*, plant. *RUE*, plant. *SAGE*, plant. *SHALLOTS*, finish planting. *SALSAFY* and *SCORZONERA*, sow a little for early use. *SAVOYS*, sow. *SEAKALE*, sow or plant out; attend to early covering-up, to exclude the light from the crowns, for successional and late crops. *SKIRRETS*, sow, e. *SUCCORY*, sow. *SORREL*, plant or sow. *SPINACH*, sow in succession. *TANSY* and *TARRAGON*, plant. *THYME*, sow or plant. *TOMATOES*, sow in hotbed, e. *TURNIPS*, make a small sowing two or three times during the month. *T. WEAVER*.

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TO FARMERS, POTATO GROWERS, AND OTHERS.

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EXTRACTS:—

"One of the fields of this farm, the property of MRS. STANBURY, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased, and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the Smut."

G. B. BAXTER.

"Belmont Farm, Eltham, Kent, August 28, 1854."

"Admiral Sir J. A. GORDON, K.C.B., Marlee House, Blairgowrie.

"Sir,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr. JACKSON, were planted in a piece of new ground, and according to the directions sent by him along with them to the distance between the plants, &c. They came up well, with strong healthy stems; I have now taken the whole crop up, and there is not the

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slightest appearance of any disease amongst them. They are of large, equal size, and very prolific. There were long, black unprepared Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased. I hope Mr. JACKSON's process may be widely known, as it is a great boon.—I am,—&c.,

JOHN SHANKS, Forester, Kildrummy Castle.

"Kildrummy Castle, Aberdeenshire, November 17, 1854."

"I am very much pleased with the result of the experiments I have made with your Prepared Potatoes; for I have planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease, and in a very fine condition; while those of the same sort, unprepared, which were planted at the same time, and next to them, are diseased, and eaten by worms.

"The Potatoes from the Prepared Seed were so remarkably good that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others, or about 25 per cent, in favour of your preparation."

T. AUSTEN, Nurseryman and Seedsman.

"Blackheath, Kent, 24th August, 1854."

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6½ " 4½		11½ " 9½		16 " 10	
6 " 5½		12 " 9		16½ " 10½	
7 " 5		12½ " 9½		17 " 10	
7½ " 5½	13s 6d	12 " 10		17½ " 10½	
8 " 6		12½ " 10½		18 " 11	
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9½ " 7½		14 " 10			
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WEEKLY CALENDAR.

D M	D W	MARCH 6—12, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
6	Tu	Hydroporus glanularis.	30.636—30.437	44—24	E.	—	37 a 6	46 a 5	8 48	18	11 34	65
7	W	Hydroporus trifidus.	30.424—30.377	50—44	S.W.	—	35	48	10 1	19	11 20	66
8	Th	Hydroporus confuens.	30.332—30.285	55—46	S.W.	—	33	49	11 20	20	11 5	67
9	F	Laccophilus hyalinus.	30.258—30.195	62—47	S.W.	—	31	51	morn.	21	10 50	68
10	S	Laccophilus minutus.	30.101—30.991	56—40	S.W.	01	28	53	0 41	22	10 34	69
11	SUN	3 SUNDAY IN LENT.	30.140—30.101	61—27	S.W.	—	26	55	2 2	23	10 18	70
12	M	Elatér nitidulus.	30.061—30.924	63—27	S.	—	24	56	3 18	24	10 2	71

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 50°, and 32.5°, respectively. The greatest heat, 66°, occurred on the 9th, in 1826; and the lowest cold 7°, on the 10th, in 1847. During the period 125 days were fine, and on 71 rain fell.

Not the least remarkable accompaniment of the severe frost which has now passed, is the fact, observed in the *Times*, *Morning Chronicle*, and other daily papers, that not only the exact day of its commencement, January 15th, was foretold by Mr. Beaton two months before, but also the time of its duration.

There are, however, some other facts connected with it deserving notice, and first of these is, that it is one of those severe frosts which periodically visit us every twenty-four or twenty-five years. Thus, there was one in 1683-4, another in 1708-9, and others followed in 1730, 1753-4, 1763, 1789, 1814, 1838, and now 1854-5. Of course, there were many intermediate severe winters; but the foregoing were pre-eminently so. They are all mentioned in the following communication to the *Gentleman's Magazine* :—

“Holinshed informs us that in 1565, ‘the one and twentyth of December began a frost, which continued so extremelie that on New Years Euen, people went ouer and alongst the Thames on the ice from London Bridge to Westminster. Some plaied at foot ball as boldlie there as if it had been on the drie land; diuerse of the Court shot daily at targets, set upon the Thames, and the people both men and women went on the Thames in greater numbers than in auie street of the citie of Loudon. On the 31 daie of Januarie, at night, it began to thaw, and on the fift daie was no ise to be seen between London Bridge and Lambeth; which sudden thaw caused great floods and high waters, that bare downe bridges and houses, and drowned manie people in England; especieallie in Yorkshire, *Owes bridge was borne awaie with others.*’

“Dr. Derham, in the *Transactions of the Royal Society*, records a remarkable frost in 1683-4, when the Thames was frozen so as to bear carriages.—This frost began about the beginning of December, and lasted till the 5th February (O. S.) Rapin says, at London there was another city as it were on the ice; by the great number of booths between the Temple and Southwark; in which a fair was held upwards a fortnight.

“Dr. Derham gives a more particular account of the great frost in 1708-9, when it appears from a comparison of the scale of the thermometers then in use with that of Fahrenheit, that Fahrenheit's thermometer would have fallen to about 1½ degrees. During this frost, he says, though several people crossed the Thames at some distance above the Bridge, it was only towards low water, when the great flakes of ice which came down stopped one another at the Bridge, till they made one continued bed of ice from thence almost to the Temple; but when the flood came, the ice broke and was all carried with the current up the river.—

He further states, that though this frost was extremely rigorous in the Southern parts of the Island, yet the Northern felt little of it; and he quotes a letter from the then Bishop of Carlisle, dated Rosa, who says ‘none of our rivers or lakes were frozen over:’ and a letter from a gentleman at Edinburgh, who writes, ‘We had not much frost to speak of, and it lasted not long.’

“This frost appears to have been long remembered on the Continent for its remarkable severity. In England trees and shrubs were greatly injured, which was attributed to temporary thaws, succeeded by intonse cold.

“The next frost particularly noticed by Dr. Derham was in 1715-16, when the Thames was frozen over several miles, booths and streets were made on the ice, an ox roasted, &c.

“The cold this winter never appears to have been lower than 11 degrees of Fahrenheit; and Dr. Derham observes, ‘the true cause of the freezing of the Thames that year was not barely the excess of the cold, but the long continuance of it.’

“Professor Weidder, of Wittenburg, describes the Winter of 1723 to have been severer in Germany than that of 1709.

“In 1730-1, Dr. Derham says, the frost was as excessive as in any of the years of his observations; and the cold appears to have again been about 1½ degrees of Fahrenheit in 1709.

“In 1739-40, there was a remarkably long and severe frost, which appears to have extended over the Continent. The lowest degree of the thermometer observed by Lord Charles Cavendish in Malborough-street, was 13 degrees on the 5th of January, on which day it was observed to be 10 at Stoke Newington. At Oxford, the thermometer this Winter fell to 13 degrees. This frost began December 24th, and is said to have lasted nine weeks. Smollett says, a multitude of people dwelt on the Thames in tents, and a great number of booths were erected on it.

“The *Transactions of the Royal Society* also record a remarkable frost in the Winter of 1753-4. The thermometer varied 40 or 50 degrees in 24 hours; the cold coming as it were by fits, in an unusual manner. The lowest degree this Winter was 15.

“In 1762-3, the frost set in on the 25th December, and continued with little intermission till the 29th of January. This frost commenced earlier in France, Holland, and the North-east parts of Europe, and was proportionably severer. Mr. Pigott, of York, observed a remarkable degree of cold in January, at Caen, in Normandy. At London the Thames was frozen so as to bear carriages. The lowest degree of the thermometer at Cardington, in Bedfordshire, was 10½. In Coruwall, Wales, and Ireland, the Winter was milder than usual.

“The Winters of 1767 and 1768 were severe. In

January 1767, the thermometer at Norwich was at 7 degrees; this Winter was as severe at Copenhagen and Berlin as that of 1740. The Rhine was frozen at Coblenz on the 21st of December, and continued till the 14th January. On the 31st Jan. 1768, professor Wilson, at Glasgow, observed the thermometer at 2 degrees below 0; at Derby, on the 8th, it was observed 1 degree below 0. At Paris the Winter was colder than that of 1740, and only one degree (Reaumur) short of 1709.

"The next remarkable Winter was that of 1788-9, in which there was a fair on the Thames, and the thermometer at Oxford fell to 13 degrees, as in 1740: at Lyndon, in Rutlandshire, to 13½; at London, to 17½; this was also a severe Winter on the Continent.—The Winter of 1794-5, was severe; the thermometer in London fell to 7 degrees; on the 24th of January, the thermometer is noticed in Rees's Cyclopaedia to have fallen to 6 degrees below 0; but in what part of Great Britain, and in what situation, is not stated. The Winter of 1798-9, was remarkable for severe frosts and deep falls of snow. In December 1798, the thermometer at London fell to 11 degrees.

"The great frosts therefore appear to have been in the years 1683, 1709, 1716, 1740, 1763, and 1789. There are no long-continued frosts on record during the last century, except those above noticed. Extraordinary degrees of cold have been occasionally observed. In January, 1780, Professor Wilson, of Glasgow, observed the thermometer at 14 degrees below 0; and in January, 1781, at 4 degrees below 0. In December, 1796, at London, the thermometer fell to 4 degrees. At York, the thermometer has been observed in January 1802, at 10 degrees; in December 1803, at 9; in January 1810, at 11; and in December 1811, at 12 degrees."

In 1813-14, the Thames was again frozen, and booths, printing presses, &c., were erected on the ice between Blackfriars and London Bridges. In 1823 the river Thames was also locked up with ice.

The minimum temperature we observed at Winchester was 10°, which happened on the 11th of February; but at Marsden, near Burnley, in Lancashire, we are informed by a correspondent, that it fell on the 16th of February to 2° below zero of Fahrenheit, which is thirty-four degrees below the freezing point of water. On the 10th it was 2° below zero at Chiswick.

In the neighbourhood of London the following table shews the lowest points reached by the thermometer in the years named:—

1807 ... 13°	1816 ... 5°	1825 ... 21°
1808 ... 12	1817 ... 17	1826 ... 10
1809 ... 18	1818 ... 16	1827 ... 10
1810 ... 10	1819 ... 10	1828 ... 24
1811 ... 14	1820 ... 0	1829 ... 16
1812 ... 18	1821 ... 18	1830 ... 8
1813 ... 19	1822 ... 14	1831 ... 18
1814 ... 8	1823 ... 4	
1815 ... 17	1824 ... 19	

In addition to the results already noticed, we have the following tables of the lowest temperature observed during the late frost. That at Marsden, near Burnley, in Lancashire, is from a register kept by Mr. John Eeroyd; that at Southampton, by Mr. Charles Sharp;

and that at Winchester, by Mr. Stuart, gardener at Mr. Savage's Botanic Garden. That at Chiswick is from the Horticultural Society's Register:—

MARSDEN.			CHISWICK.		SOUTH-AMPTON.		WINCHESTER.	
D of M	JAN.	FEBRUARY.	JAN.	FEB.	JAN.	FEB.	JAN.	FEB.
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.
1	45	27	46	17		27		24
2	43	29	44	27		24		22
3	42	31	39	23		28		31
4	44	35	38	33		35		31
5	43	33	40	31		36		32
6	43	33	44	29	47	34		36
7	44	28	42	27	47	33		30
8	43	22	41	27	46	29		26
9	31	25	28	15	44	30		24
10	26	11 at 10 P.M.	27	1	42	24		20
11	40	20	29	20	34	18		10
12	40	14	32	23	37	25		26
13	39	15	26	0	38	25		22
14	36	15	19	17	35	16		22
15	30	10 at 7, 30 A.M.	21	10	28	20	26	18
16	29	2 below zero.	22	19	29	23		16
17	23	1 below zero.	20	2	26	20		22
18	25	8 at 8 P.M.	18	3	24	18		12
19	29	15	13	20	28	20		18
20	27	15	18	8	23	24		13
21	28	14 at 10 P.M.	17	10	26	18		18
22	30	7 at 7 A.M.	18	23	25	26		23
23	29	20 at 7 P.M.	24		27	32		32
24	30	24 at 7 A.M., day	26		30			30
25	28	closing with	23		30			38
26	29	every appear-	17		32		30	34
27	16	ance of a	15		32		28	38
28	31	thaw.	26		26		26	38
29	17		17		28		28	
30	22		25		27		26	
31	24		23		28			

In reference to the Winchester temperatures, Mr. Savage says—

"I regret that Stuart has not a register of January; and the only memorandum I have is that the thermometer ranged from 40° to 48° from the 1st to the 10th; on the 16th and 17th, 10° of frost; and from 26th to the 31st, thermometer 24° to 28°; but this is, of course, not sufficiently particular."

Mr. J. Walker, of Marsden, writing on the above register for that place, says—

"February 16th, as per annexed, the thermometer did not come down below zero until a little before 12 P.M., and did not remain below more than ten minutes, suddenly getting up to 6°. On the 17th it was down below zero for nearly the last two hours of the day. I think the most intense cold we have had was on the night of February 21st, and morning of the 22nd, the thermometer being low for the greatest length of time.

"The time the observations were taken are not stated, excepting a few of the most remarkable."

We have had also a letter from Mr. H. Allnutt, of 27, College Green, Dublin, in which, referring to the "Irish Land Schedule," which we have not yet seen, he says—

"The mean for the month of January is given in that

Schedule, by which we see that the temperature of Ireland is about five degrees higher than in England.

Mean temperature of	Deg.	Mean temperature of	Deg.
Greenwich	34.5	Dublin	37.5
Nottingham	35	Portarlington	37.5
Howarden	30.5	Armagh	37
English Mean	33.33	Ireland	38.16

"We can scarcely at present speak of the state of the barometer; neither is it possible to remark on the fall of rain; for the returns have been, in nearly every place, 'frozen.'"

At present it is premature to state what have been the effects of the severe weather upon our out-door plants. At Winchester, with an elevation of 300 feet above the sea's level, on a light loam, resting on chalk, the *Cryptomeria japonica* has its lower leaves browned, but the upper leaves are green. The *Taxodium sempervirens*, on the contrary, has its upper leaves killed, whilst the lower are much less injured. We do not think either of the trees have suffered much, but the *Taxodium* certainly the most. Newly-planted *Laurustinuses* and *Berberis aquifolium*, both old and young, have been scorched brown, as it were, on the side exposed to the long-prevailing easterly winds. The common *Laurel*, *Arbutus*, and *Portugal Laurel*, are quite uninjured. The soil was so dry when the frost set in that we do not anticipate much injury has been sustained.

We shall be much obliged by any of our readers communicating to us accurate registers of temperatures during January and February, as well as the consequences to plants exposed to them.

THE NEGLECTED SHRUBBERY.

THERE is as much difference between the neglected shrubbery and the well-managed shrubbery, as between a high-mettled racer and a horse for the kennel. Strangely it is that persons living in neat villas or suburban residences—to say nothing about halls or mansions—should rest contented with the gawky, lean, and poverty-stricken looking trees, or shrubs, which, in but too many cases, constitute what is termed a shrubbery. Such pea-stick-looking screens may have been tolerably well planted at first; the things, whilst young, probably looked fresh and prosperous; but by degrees, and, as it were, in an insidious way, most of those shrubs, or trees, which were intermixed at first, in order to produce rapid effect, and, indeed, to economise more choice things, become so coarse and rampant, that superior shrubs or evergreens have no chance, and instead of becoming yearly handsomer, grow annually more scraggy, and finally become mere skeletons.

Every shrubbery intended for an ornamental appendage to the dwelling-house, or, indeed, in any important part of the grounds, should be looked over annually, and the very best time for this proceeding, in my opinion, is the month of November, towards the end. At that period the deciduous trees, or shrubs, will have cast their leaves, and as hacking and pruning, as well as any re-arrangements by transplanting, is sure to produce disorder, one thorough cleansing, which would, in any case, be requisite, will suffice for all the operations. Besides, since in the majority of cases, either some planting or removals will be necessary, I am anxious to impress on the minds of the reader the great

importance of using the shrubbery rakings, in all cases, in the bottoms of the holes for trees or shrubs. This practice I have followed for many years, and I imagine we might challenge the country for luxuriant evergreens, shrubs, and trees.

In examining neglected shrubberies, a sharp bill-hook, hand-saw, and pruning-knife, are requisite, and sometimes the woodman's axe. When of any age and size the axe will occasionally claim the precedence. If any will, Sycamores, Beeches, or other overbearing timber trees, are likely to derange the original plan of giving a dignified sky outline, and at the same time permitting shrubs, evergreens, &c., to well occupy the ground line; let those be removed at once, before they have done more mischief. This proceeding will pave the way for a free consideration of what ought to be done, which can seldom be the case when one of the hands is tied through a too fast adherence to one mode only of judging things, and which has generated a kind of fixedness in the mind but ill adapted to give any customary thing a free reconsideration.

It will be seen that I have been pointing to what has been termed the Tree Mania; for verily, although we all love trees, I hope; and although a man should sleep once or twice on the suggestion of taking down one of these would-be veritable giants, yet it is unfortunate to see, as we have seen, most important plans marred through this want of consideration in deciding on such operations.

In such uncomfortable and half-worn shrubberies, then,—lean, poor below, rampant above—the chief business, in general, is first to see that the mere ground line is furnished in such a way as permanently to prove warm in winter, snug, and durable. He who can accomplish this in limited shrubberies, which may be taken as accompaniments of the house, and, at the same time, impart most botanical interest and most dignity, I take to be the very artist required.

Of course, if huge young trees, or shrubs, are moved, other things will be required to fill the blanks occasioned; and even as I would advise some pert country wench—who wanted to be fine at the expence of comfort—to first secure good linsey-woolsey before she purchased silks; so now I say as to planting—see that you have some of our permanent evergreens introduced as a basis to the scheme, and then let us talk about new and fine shrubs.

One of the most permanent shrubs we have, and one which is ever looked at with pleasurable feelings, is the *Holly*—none of your hedgehog *Holly*, but the old green *Holly*, made to luxuriate. This I adverted to before, in a little advice about the *Holly*; I therefore pass on, merely observing, that I am impulsively led to place the *Holly* first on the list. The *Portugal Laurel*, where soils are suitable, is a long-enduring and comfortable-looking evergreen; and, indeed, wherever a shrubbery is rich in these two evergreens as a back ground, there be sure you will love to walk during the dreary winter days, and will, moreover, raise no objection, even in summer, so long as they do not trespass on the border, which has to glitter with *Tom Thumbs*, the *Cerise Unique*, *Verbenas*, *Fuchsias*, &c.

But good and permanent evergreens for securing a warm groundline are well known. I must pass by this matter; and am now in a position to speak of decorative affairs, which brings me to suggest a liberal use of those shrubs, or evergreens, which at once present an outline, as to bulk and figure, worth consideration, and at the same time, possess floral or other features of importance. This, of course, is for the foreground of the shrubbery. Of such are the *Arbutus*, the *Laurustine*, *Mahonias*, and some of the *Berberis* family, amongst which I cannot allow myself to omit that delightful evergreen bush, the *Berberis Darwinii*.

Well, then, we have all our *Rhododendrons*, from the

R. arboreum down to the *Caucasium*; not forgetting some of our new Sikkims.

Amongst the American tribes, too, there are some other evergreens which attain a respectable stature under proper circumstances: there are *Kalmias*, some *Vacciniums*, *Andromedas*, and even tree-like hardy *Erics*, as *arborea*, *stricta*, *Mediterranea*, and others. Then, again, amongst novelties, what nice things in the *Cupressus* family—the *Thuja*, *Libocedrus*, *Sequoia*, *Cephalotaxus*, *Juniperus*, and I do not know how many more fine trees, which adventurous men have rummaged almost every clime for. I merely name these as suggestions, and in order to point to one fact, which I would wish to impress on the minds of the owners of suburban residences, and it is this;—in proportion as your shrubbery is limited, and shelter is requisite, so let such evergreens prevail.

Let it not be thought, however, that I have no taste for handsome deciduous shrubs. I at once totally disclaim all such partiality. No; it is because I have so often witnessed the meagreness of “*the neglected shrubbery*,” chiefly on account of the deciduous things being permitted, through negligence, to domineer over evergreens of much higher character, and, consequently, of less rudeness. All I can say is this;—that after furnishing the back-ground snugly, and keeping an eye on the sky-line, by anticipation, do all you can to get introduced a sprinkling of pretty-blooming, deciduous shrubs, *Roses*, or what you will.

It will be seen that I have not kept so close to my theme as the title to these remarks would seem to suggest. It occurred to me, however, whilst examining the subject, that so many neglected shrubberies required so much handling with the bill-hook and pruning-knife as would warrant the assumption, that chances would occur for the introduction of many new or useful things; and when they have been thus neglected, there is nothing like putting them through a strong ordeal at once, especially seeing that on the heels of such an operation a thorough cleaning can be effected; and by the course of planting suggested, the shrubs derive most important benefit, through the operation being well-timed.

R. ERRINGTON.

PLANTS IN A BED-ROOM.

THE first person who told me that plants were poisonous in a bed-room was Lord Lovat's housekeeper, at Beaufort Castle, in 1821. Her name was Amelia McPhail. I had a few plants at home at that time which I was learning to strike from cuttings, and I did not much like the idea of having poison in-doors, although none of us knew of it but myself; still, I was loth to turn them out. Besides, I knew my father kept *nux vomica* in the house to poison dogs with, such as might stray about, and kill lambs, or frighten sheep, and no harm came to any of us from that kind of poison being in the same house. But the following summer one of my sisters was taken very ill, and the doctor ordered all my plants out of the house, but he could not save her; and I had a lurking suspicion, for a long time, that my plants, after all, were the cause of her death. Hence it was, that for many years I had a great horror of plants being kept in a living room.

When I was in Edinburgh, I lodged, part of the time, with two medical students, who attended the University, and the botanical lectures of Dr. Graham. Before we parted, I was almost a doctor myself. I learned how plants were supposed to poison the air of a bed-room; that their leaves sucked in the life-sustaining portion of the air (oxygen gas), and gave out “foul air” (carbonic acid); hence the reason why unthinking people took up the notion that plants vitiated the air of the room. If

the quantity of either life-sustaining or foul air which 75 pot plants could thus destroy, or produce, in twenty-four hours, was computed, and found to be so much, the self-same quantity of air could be proved to be vitiated in ten minutes by an infant three months old, and by a full-grown man in two minutes! If this be so, and happily there is not the slightest question on the subject in these days, the most dangerous of all the poisons for the air of a bed-room is a full-grown man.

Although it is quite true that plants do vitiate the air of a room to, comparatively, a fractional degree, it is equally well ascertained that they consume and destroy a very great deal of foul air; and that without foul air, such as would kill a man, plants could not be kept alive at all. We gardeners know this fact from our every-day experience; we cannot grow plants so well, or so quickly, in the sweetest air as in a stinking hotbed. All the animal creation vitiates the common air every time each one breathes the breath of life, or life-sustaining air; and were it not that all the vegetable kingdom depend on this vitiated air for part of their subsistence, and a great part, too, this world would have been at an end as soon as animals covered the face of the earth. Therefore, and without the shadow of a doubt, plants are the best purifiers of all the agents that have yet been known to cleanse the air of a bed-room, or any other room in a house, provided always that such plants are not in bloom, or, at least, do not bear bloom with a strong scent.

The scent of flowers is now almost the only thing which defies the art of man to compute by measure or weight. Every one must compute the scent by the sense of smell, the most varying of our senses; so varying, indeed, that one could sleep on a bed of *Roses*, another among *Syringa*, or *Magnolia*, or *Lilac*-blossoms, and so forth, while a third party could not sit ten minutes in a room with a *Hyacinth* in bloom. I have known such an one; and another, who is compelled to leave England altogether during the Hay season. But, in all this, there is no poison in the smell of these flowers; nothing but that some constitutions cannot bear them.

And now for the practical value of this kind of doctoring. I saved more than two hundred good plants in my own bed-room during the late frost; there they were, day and night, during five weeks, and I have never been so healthy these thirty years. I seldom went through so much without some slight cold, or a little sore throat; but the air of the rooms was kept so fresh and so pure by the requirements of so many plants crowded together, that an invalid would certainly have gained strength in it during the time. A medical gentleman, who likes a chat about flowers, called on me in the midst of the frost, and when I heard the announcement I began to tremble. He always asks to see my flowers, and I thought to myself, I shall “catch it” now, when he finds them all over the house. I never asked him if he studied in Edinburgh, but I think half the doctors in the world go there; but that is not “here nor there.” When I asked him what he thought of my plan, “Not much;” he replied, “for if all the world knew the value of plants so well as you seem to do, our profession might take to the plough.” “Well,” said I, “all the world shall know just what you say, and judge between us.”

But I am not quite sure that I would have said any thing about it, were it not that Mrs. Robert Moody told me, to-day, that Mrs. Brown had lost her *Geraniums* with the frost. Mrs. Brown is fond of plants, and Mr. Brown is very fond of her; but they have not been married long, only getting towards the ninth month; and Mr. Brown vowed that he would not risk the chance, or the life—I forget which they told me—of an heir, for all the flowers in England; and so the plants could not be admitted into his bed-room on that score. And

judging there might be more of his views respecting an heir or heiress, I judged it right and proper to give a practical illustration against one of the most ridiculous of all the popular prejudices of the present day. If I was compelled to sleep in a close room, without a fire-place, to keep the air of the room in motion, I would not only keep it well stocked with strong, healthy plants; but if I could afford it, I would change them twice a-week, for more security against the evil effects of close, vitiated air. And if there is one medical gentleman alive, who still holds a different view of the subject, it is dangerous to let him be at large during a hard winter, or, indeed, at any time. To be permitted to misconstrue the truths of science, to the prejudice of the invalid, is as dangerous as to trust in the hazards of empiricism; but to be allowed to attend to the wants of some favourite flowers would be, to some invalids, as useful and valuable a medicine as any within the range of pharmacy.

SEPTEMBER OR MARCH FOR PLANTING.

What is to be done by those who must remove fruit-trees, and ornamental trees, plants, and bushes before Lady Day, or forfeit them? No planting could be done this winter from the middle of January to the last day of February; but there are no exceptions, in the law of landlord and tenant, to meet such a case; but still, honest people might compromise the matter, and put off the removal till the autumn, or Michaelmas term, or, plainer still, till the 29th of September. Now, of the two, which is the best season for the general purposes of the planter; the whole month of March down to the 25th, or the month of September all but one day, the last day? This is a critical question, and one which is by no means easily decided.

There is no question about the whole of September being the best month of the twelve for removing large *Evergreens*; but if we were to have a dripping May, small evergreens, such as young nursery stock, would be safe enough to plant in March and April; if, on the other hand, we should have a dry May, with easterly winds, hot, sunny days, and cold nights, March and April are the two worst months in the year for transplanting evergreens of any age. *The last ten days of May*, if without strong easterly wind, is a better time for removing evergreens, particularly young ones, than any time from the beginning of March to the 20th of May. This is very curious; but I am quite sure it is correct, for I have proved over and over again, that the very end of May is the safest period of *the spring* to remove evergreens, taking one season with another. Those who still entertain the old notion about transplanting evergreens in April, as the best time, are not interfered with by the state of the winter, whether hard or mild.

The very end of September is too soon to remove *Peaches*, *Neectarines*, *Apricots*, and *Grape Vines*, but not so for any other of our fruits, provided the trees or plants are well pruned the moment they are taken up, or the moment before the work of removing begins; but the true principle of pruning in the autumn, with reference to transplanting, directs the pruning to be done a few days, but not more than *ten days*, in *September*, before the plants are removed.

The doctrine which teaches you to remove your trees in October or November, but not to prune them till the spring, has been losing favour, among practical gardeners, for years past, and some gardeners would never hear of such a thing. The idea was wrong from the beginning. But if the end of September is too soon to remove such plants, or kinds, is not the month of March too late for transplanting *Vines*, *Peaches*, *Apricots*? It certainly is in ordinary seasons; but this is not one of that character; this is a very unusual season. All our trees are

not one degree more forward, on the 1st of March, than they were on the 15th of last January; therefore, I would not hesitate one moment to remove any trees this season much later than is usual. But the question with which I opened this part of my "weekly" refers to a case, or cases, such as the following, from "A Constant Subscriber."

"I shall feel much obliged for your advice, in an early number in *THE COTTAGE GARDENER*. I am in this position; I must either move fruit, Rose, and other trees, shrubs, &c., immediately the frost leaves, or leave them till September. I must remove them by the 29th of September. Will this be too early in the autumn?"

If I were in the position of this correspondent, I would set about removing all my plants at once, and take my chance. The fruit-trees, and the Roses, I would prune closer than if they were not to be disturbed; indeed, I would prune all such plants more closely than is generally done. Supposing there are *Vines*, *Peaches*, and *Apricots*, to be moved, I would give up all idea of having fruit from them the next autumn; and it would be much the same the following year, if I had to remove them before the 29th of September; but the early autumn removal would not be more than one-half the hardship of late spring planting to these trees themselves. There is not the least fear about the *Roses*, nor about a vast variety of shrubs and ornamental trees, in such a late season as this, if they are not removed till the very last day of the time specified, the 25th of March. Every planter, of any standing, has transplanted every kind of plant as late as April, some time or another, although that is not either the usual or the best practice. Upon the whole, therefore, I would recommend our correspondent to set about removing all his plants at once; unless, indeed, some of them may happen to be large evergreens, and if they can remain till next September, it will be better to leave such as they are till next autumn. But for general planting, when one is not tied by circumstances, we never recommend spring planting in preference to autumn planting. If I were tied to time, and had to remove different kinds of fruit-trees and other plants late in the spring, I would begin with *Vines*, then the *Peach-trees*, after them the *Apricots*, then *Cherries* and *Plums*, and last of all the *Pears* and *Apples*, and the bush-fruit, as *Currants* and *Gooseberries*. After these, I would remove all the deciduous trees and shrubs, leaving all the evergreens to the last week.

All trees and shrubs that are transplanted late in the spring require to be more carefully staked and mulched than those in the autumn, as the winds and sun press harder on them than on those which were planted before Christmas, and are now well settled in the earth. With respect to such plants as may be injured by the late frost, it is not good practice to begin to cut them down before the end of April, as, although they may look badly, perhaps they are not so bad as they appear to be, and cutting them down will not now help them much.

D. BEATON.

CULTURE OF ROSES IN POTS.

A VARIETY of enquiries have been made on this subject, and in endeavouring to reply to them, I must do so in a rather random manner.

GLASS REQUIRED.

"I am anxious to grow some large plants of *Roses* in pots, something in the style of Messrs. Lane, Francis, and Paul, as these gentlemen exhibit them at the great Metropolitan shows. I have got a shallow pit, which would do for the plants when they are young, and a fair-sized greenhouse, containing a general collection of plants, which I am told would do admirably for the

Roses afterwards, as they, it seems, require no forcing, or very little, to bring them into bloom in May and June. Is there any thing to prevent me growing a score in such circumstances, in order that I may select from them a dozen of good exhibition plants?"

I think there is. Your shallow pit would do for the Roses in winter and spring, so long as you kept them small, and therefore, for a year or two, you might bloom them there if deemed desirable, more especially if you had the command of a hot-water pipe, to dissipate anything like damp in foggy weather, after the buds had broken.

Many kinds, and especially Tea and China Roses, would bloom very fairly, if placed in a common greenhouse after the new year; because, after they were fairly started, the temperature that suited Geraniums, &c., would not be unsuitable to them. But unless great care, and much room, were given to the Roses, you must be gratified more with a quantity of bloom than with the beauty of each plant individually.

To grow from a dozen to a score of Roses in a beautiful bush, or pyramidal shape, some four or five feet in height, and three to four feet in diameter at the base, would require the *whole* of a fair-sized greenhouse to themselves, from February to June or July. The great secrets of success with such fine, large plants, are plenty of room, so that light and air are given pretty equally to every part of a plant, both before and after its buds are broken; a very low temperature; and more air than would suit greenhouse plants, before every bud had broken; and abundance of room, to permit of shoots being pegged down and bent, so as to secure the breaking of every desirable bud. With every desire to encourage making the very most of little means, it is no charity to encourage efforts for the unattainable. I fear that, in this respect, some of our great men are to blame, for encouraging hopes that can never be realised. With every possible convenience, they speak of certain results being so easily attainable; and then, when, without these conveniences, some clever men fail, the result is attributed to their incapacity, rather than to any thing connected with the impossibility of the circumstances. Within these few years, I have met with several instances of this kind. Take one for an example:—A place distinguished for a good supply of flowers all the year round; and where, as cut flowers were in great demand, the cramming system instead of the specimen-growing system had to be practised; all at once, the proprietors resolved to become exhibitors; the gardener, a most worthy fellow, was quite as anxious; a nice little sum was spent in a select collection, to obtain a fair start; and, even as respects commoner things, it was decided to have individual plants to look at, instead of plants to crop over when in bloom. So long as the flower-garden supplied plenty of cut flowers, all "went merry, as a marriage bell;" but, heigho! when the dark days of winter set in! There were the plants destined for the exhibition, it is true; but, then, how little bloom, in comparison, was now to be obtained; and how thin the houses looked; every plant afraid to look at, or rub elbows with its neighbour; and, after much grumbling, of which the gardener for the first time had known any thing, it was resolved that in future exhibition plants must only be in such numbers as not to interfere with the general supply. I know several cases, in which growing fine specimens of Roses, in pots, has led to misunderstandings so great, that smaller plants, slightly forced, to bloom among a general collection of greenhouse plants, had to be resolved upon, instead of splendid single specimens. Let it then be considered as a fact, that to obtain such fine plants of Roses, and to make the most of them when obtained, a house must be appropriated to them; and then they must stand quite thinly.

My neighbour, Mr. Busby, of Stockwood, has beautiful plants of the best Roses in pots, and has been very successful in blooming them well, but from the end of January until about June, they have a low span-roofed house almost entirely to themselves, the houses being appropriated to nothing else than growing late Muscat Grapes. This house, in two divisions, is furnished with a pit over a tank in the centre, with a path all round. In this pit there is generally enough of saw-dust to plunge the pots up to their rims, and this saw-dust generally supplies enough of bottom-heat. When I called there, on a cold day, a fortnight ago, the saw-dust was pulled away from the sides of the pots for one-third of their depth, to prevent too much heat, and the top sashes were down nearly their full length; the buds just peeping. Every shoot on the splendid plants, of any length, was bent to make the back buds break freely. There are few things more gorgeous and lovely than such splendid specimens covered with blooms and buds; but, to prevent disappointments, let it be clearly understood that success greatly depends upon plenty of room, and the having a house almost entirely to themselves. I believe every one of our great Rose-growers would tell you a similar tale, so far as these plants are concerned. A great result is hardly ever arrived at without involving little sacrifices. The chief sacrifice, in the present case, is *room* under glass, as the artificial heat required will be comparatively trifling.

"How long shall I have to wait for young plants to rival those of Messrs. Lane? Is there no chance of getting medium sized plants to start with, and at a moderate price? I asked the price of some fine specimens last season, but it quite frightened me. A fellow would require to be made of money."

Every one knows, that though it may not be the intrinsic worth, yet the market value of anything is just the money it will bring. In plants, *novelty* constitutes a great matter in its price. Growing large specimens of Roses in pots is comparatively a novel affair. The practice has as yet been confined to a few individuals, and, so far, they have the market in their own hands. The value of a thing is not uniformly regulated by the supply and the demand. The demand may be so seldom, that to supply it at all must involve much trouble and expense. The demand may be so great, and continuously increasing, and thus so far affect the mode of producing, that the more the demand, the cheaper and more easily obtained the supply. Almost all these fine specimen Rose-plants in pots have been grown for exhibition purposes, and, consequently, according to their age, are looked upon in value, something according to the trouble and expense they have occasioned in monopolising so much room under glass for such and such a time. Let the demand for such large symmetrical plants in pots become general, and our Rose-growers will prepare the most of them, with little or no assistance from glass at all; merely plunging the tenderest of them in a shed in winter, with, perhaps, a little glass in its roof. Even they could never be cheap in comparison with young plants, if kept in pots for the most of their career. But then, it would be an easy matter to grow them thinly in beds for two or three years and then pot them, as some amateurs do.

I have had very good Roses in April, from plants potted the previous autumn, though they would be better of a summer's growth in the pots, before being asked to bloom under glass. From such modes as these, amateurs would eventually be able to procure good Rose-plants in pots at a moderate price, if there was a great demand for them. At present, for the reasons mentioned, they must be expensive. I do not know the commercial value of such plants, but it will, perhaps, draw out an approximation, did I venture to imagine that neither of the great Rose-growers named would part

with twenty of their best plants much under a hundred pounds. Very nice, stubby plants, two or three years grown and trained, may be had for about one guinea each, and these would be very nice to begin with; and though they might not do much the first season, would be fit to be transferred to their flowering-pots, say thirteen inches in diameter, and would blow nicely the following year. On an average, nice little plants, which you might procure *now* in three-inch pots, would require two or three years' growth to equal these last named, and from four to six years' growth to equal the strongest of these great Rose-exhibitors.

CULTIVATION.

I will now give a few hints as to the management of such plants for blooming in the end of April, May, and June, merely premising, that fine blooms, and plenty of them, may be procured from small plants, in and after the second season.

1. It will be advisable to have all such *on their own roots*. Suckers are thus avoided, and when a strong shoot comes from the roots, it may either be removed, or allowed to remain to fill up a gap in older wood past its best.

2. The *soil* used should be good, mellow, hazelly loam, enriched with dried nodules of cow-dung or sheep-dung. The pots should be well drained, and if there is a cap over the hole in the bottom, to prevent the possibility of worms entering, so much the better. This precaution will save much labour and trouble afterwards.

3. *Potting*.—Young plants, when received, whether in autumn or spring, should be placed in a pit, or the front shelf of a greenhouse; as soon as the pots are filled with roots, shift the plants into a larger sized pot. Keep the plants in the pit with plenty of air until the beginning of June, some will, probably, then want another potting; allow them to remain in the pit for a fortnight or so after the lights are off, and then place them in a sunny position out-of-doors, with the roots protected from the heat, either by plunging the pots or other means. Repotting should be done in spring, or in early summer, before the plants are placed in their full-sized flowering-pots, in which they may remain for years, if supplied with rich mulchings and manure-waterings.

4. *Pruning and Training*.—I have seen splendid masses in pots grown in the pyramidal bush style; the tallest shoot being in the centre, with others of different and successional heights round it. This plan always renders it easy to thin out a worn-out or ill-placed shoot. Growing with a single strong stem, furnished with branches coming out regularly all round, is generally most approved of. Sometimes the lower base branches are apt to lose their vigour in old plants; but, if on their own roots, such a misfortune is almost sure to be remedied by a strong shoot coming from the bottom, which must be duly stopped to supply the dreaded opening. In young plants every encouragement should be given, the first season, to make growth; but a little pinching with the thumb and finger would be well, even then, to bring the plant into the desired shape. Towards October, the soft points of shoots left should be nipped off to concentrate the juices and ripen the back buds. The final pruning should be deferred until the spring, and that must be regulated a good deal by the kinds, and as to whether handsome growth or flowering is intended.

5. *Watering*.—The plants must never stand in want of this, even for a day, when necessary. During summer, weak manure-waterings will greatly encourage growth. Towards autumn little will be required, merely enough to prevent flagging, in order that the wood may be well hardened.

6. *Protection*.—By the end of October, or the beginning of November, the plants should be placed in a

cold pit under glass, and have air in the back and front, except when the frost is severe. The plants, when they get to a flowering state, will thrive better if they are not treated to much frost during the winter; but the more airy they are the better they like it.

7. *Insects*.—Green fly and caterpillars are to be avoided as ruin. Washing over large plants, when in a dormant state, with clay-paint, containing a little tobacco juice and a little sulphur, is a good preventive. If in spring a vestige of a caterpillar appears, it must not be looked for a second time; and if a green-fly should show himself, you must not wait to look for his neighbour. Fumigate, but not strongly, with shag tobacco. Better repeat the dose than give the plants too much at once. Use no tobacco-paper, or other material, unless you have previously tried it on something as tender as a young rose-leaf. If the plants should be affected after placing them out-of-doors, use weak tobacco-water to the parts, and plenty of clear lime-water for syringing.

SPECIMEN PLANTS.

Now for a few words on specimen-flowering plants. The less these have of anything worthy the name of forcing, the better they will look in May and June. Those yet to be placed in the blooming-house, and to receive little extra heat, will scarcely be in full bloom until June. The pruning should already have been done. In old-established plants pruning must be closer, in general within a few buds of the older wood, unless there is a nice shoot which you wish to break freely to render the plant more symmetrical. In young plants containing fine, well-ripened shoots, these, if desirable, might be left from a foot to eighteen inches or more in length: fine masses of bloom are thus procured. But to ensure such shoots breaking, they must be pegged, or tied down, to a horizontal position; and, if possible, so that the base of the shoot shall be the highest. Even in oldish plants, it is safest not to prune too close at first, but to bend the shoot with a string, to make the back buds break freely. If you have such conveniences as I have described at Stockwood, you will be able to observe every bud nicely.

The plunging of the pots is also a great matter, provided the heat given is only a few degrees more than the top-heat. Until every bud has broken, it is next to impossible to give too much air, if the temperature does not come below 35°. Unless actually freezing, air at night will be necessary. The advance of the season will render little artificial heat necessary. There is more danger of having too much than too little. The plants, when used to it, and defended from low temperature extremes, will come on almost naturally. From 45° to 50° may be considered a fair average night temperature after the buds are broken. In addition to plenty of air, a little shade may be given during the heat of the day, when the leaves are tender, and the sun powerful.

If the plants do not come on fast enough, it is easy to give a little more heat, but with great caution, or the flowers will be deficient in colouring, and the foliage weak, instead of robust. Manure-waterings must be given, and especially after the buds appear. Gentle dustings overhead from the syringe, in the afternoon, will also assist them. If some plants come too early, you must place them under canvass, or under glass with a north aspect.

When the plants have finished blooming, they may be sheltered for a few days, so as to inure them by degrees to the full sun. When placed at length in such a position, it is better to protect the pot by matting, by a mound of earth, or turf, on its south side, than by plunging it in the ground. By plunging, less watering would be required, and if that mode is resolved upon, the pot should stand hollow, that no water may remain at

ts bottom. I prefer the pot to stand on the surface, and protected as above, just because it will require more water; because thus the plant can receive and appropriate more nourishment from manure-waterings and top-dressings, and therefore, the stronger and firmer will be its growth. Whilst standing here, the plants must be frequently looked over, and slightly pruned, so as to remove small, useless shoots, to shorten those threatening to be robbers, &c., and receive many lashings from the syringe overhead, of clear soot, and lime-water, &c., for keeping insects at bay. By the middle of September little water will be necessary; and by the middle of October rest should be induced by placing them against the north side of a wall or fence; and then, in November, they should be housed in a shed to be protected from frost, until they go under glass again, in January, February, or March.

VARIETIES SUITED FOR POT-CULTURE.

The following are suited for such purposes —

TEA ROSES.

Adam—blush-sulphur.
Bougere—canary-yellow.
Deviensis—straw.
La Pactole—pale yellow.
Eliza Sauvage—deep straw.
Niphotos—pale lemon.
Souvenir d'un Ami—shaded salmon.
Vicomtesse de Cazes—golden-yellow.

CHINA ROSES.

Cramoisie Superieure—reddish-crimson.
Mrs. Bosanquet—creamy-white.
Napoleon—shaded blush.

BOURBON ROSES.

Acidalie—white.
Armosa—rosy-blush.
Paul Joseph—rich shaded lake.
Souhet—rich carmine.
Souvenir de la Malmaison—whitish.
Chenedolle—dark crimson.
Comtesse Mole—delicate rosy-pink.
Coupe de Hebe—bright pink.
Great Western—bright crimson.
Paul Perras—pink.
Paul Ricaut—deep carmine.

HYBRID PERPETUALS.

Baronne Prevost—large blush.
Duchess of Sutherland—glossy blush.
Geant des Batailles—fine cornelian-crimson.
Caroline de Sansal—blush.
Jaques Laffite—pale carmine.
Louise Peronny—fine rosy-pink.
Madame Laffay—crimson.
Madame Rivers—blush.
Mrs. Elliot—crimson, large.
Robert Burns—dark crimson.
Standard of Murengo—crimson-lake.
William Jesse—lilac-crimson.

HYBRID CHINA ROSES.

Fulgens—fiery crimson.
General Kleber—purplish-red.
Juno—large black.

NOISSETTE ROSES.

Aime Vibert—pure white.
Cloth of Gold—yellow, large.
Euphrosine—buff.
Lamarque—pale yellow.
Miss Glegg—white, small.
Solfaterre—sulphur-yellow.

I have mentioned these as a sort of index. The Tea Roses are rather the easiest to manage, and the most

desirable for their scent. Did I want, however, a dozen kinds, or half-a-hundred kinds, and of different colours, and best suited for a specific purpose—say growing in pots, for May—I would do just what I would advise amateurs to do—put themselves under the advice of any of our respectable growers; and I warrant they will be better served every way than if they had made out a list, with all the strength of THE COTTAGE GARDENER to aid them. If there are particular kinds preferred, of course these should be mentioned.

R. FISH.

BOUVARDIA LONGIFLORA.

(THE LONG-FLOWERED BOUVARDIA.)

THE Bouvardias are a class of plants, when well-grown, that are exceedingly beautiful. The flowers are produced in clusters, at the ends of the shoots, most profusely, and are mostly of a brilliant scarlet. Most of them are of easy culture, and are, in some places, used as bedding-out plants; still, they are not so extensively cultivated as they deserve to be.

The species I have selected to write about is an exception in regard to colour, for it is of the purest white; and, in addition to that, it has the pleasant advantage of being very fragrant. The bloom has a great resemblance to the new *Rhododendron jasminiflorum*.

HISTORY.—It is a native of Mexico, and was introduced so long since as 1827, but is yet comparatively rare. The only place where I have seen it well grown was in Messrs. Thomas Davies and Co.'s Nursery, at Wavertree, near Liverpool. It is a somewhat straggling, half-shrubby plant, with ovate leaves, about an inch-and-a-half long, of a deep dark green. This species is the most difficult of all the genus to grow satisfactorily, requiring close attention to do it well. By attending to the following points of culture, that difficulty will be overcome.

PROPAGATION.—The best season is May. To procure cuttings, place the plant in a heat of 55° to 60°. The best cuttings are short, stubby side-shoots. As soon as these have made a little fresh growth in the heat, prepare a cutting-pot, with a bell-glass to fit. The size to be in proportion to the probable number of cuttings. Six or eight cuttings will fill a four-inch pot. They should never be put in too thick, because if they are, they are liable to damp off. Drain the pot well, by filling it half full of broken pots—the largest at the bottom, and the smallest at the top; cover the drainage with some rough peat siftings, and on them place a layer of very sandy heath-mould, or moor earth, leaving an inch from the top for a layer of sharp silver sand; put that in, and give a gentle watering to make it firm. Then take off the cuttings close to the branches, with a very sharp knife, dress off the bottom leaves close to the stem, and with a nice smooth stick, insert them into the sand round the pot as close to the side as possible, just leaving room for the bell-glass. If any leaves project over the rim, or touch the bell-glass when it is on, take a few short, clean sticks, insert them so as to turn the leaves inwards. Then give another gentle watering, allow the leaves to become dry, and then put on the bell-glass, and place the pot in a propagating house, or in a shady part of a stove, keeping it shaded from the sun. If a large amount of moisture condenses on the bell-glass, let it be wiped dry every morning; and remove carefully, at the same time, any decaying leaves. In five or six weeks the cuttings will have formed roots; then prop up the bell-glass for an hour or two every day, gradually increasing the time till at last the plants will bear the glass to be left off altogether.

SOIL.—The compost to pot them off into should consist of loam, leaf-mould, and sandy peat, in equal parts, with a liberal addition of silver sand. Put it through a not very fine sieve, and place it in a warm, dry shed for a day or two, to dry and warm it.

POTTING.—Have as many three-inch pots ready as may be necessary in the same place. Drain them well, and put on a thin layer of the siftings on the drainage. When these are all ready, then take the cutting-pot and turn it upside down, placing one hand to catch the plants, and then separate them carefully from each other, preserving every root to each plant. Put one plant in each pot, give them a watering just enough to settle the soil, but by no means over do it. Let this potting be done as quickly as possible, and the moment it is finished, place the plants either in a gentle hotbed, on coal ashes, or under a hand-light in a stove. Shade from the sun for a few days, and then gradually inure them to bear full exposure. They are then ready for

GENERAL MANAGEMENT.—This plant should be treated as a warm greenhouse plant, or rather an intermediate house would suit it best. I find it necessary to keep it through winter in the coolest part of the stove; but my plants are young; probably when they become more woody they will live in the warmest part of the greenhouse. They do not die down and push up again in the spring, like *B. triphylla*; hence, it is necessary to keep them evergreen through the year.

SHIFTING.—The best time for this operation is the month of April. Take the same precautions in regard to having the soil dried, and half-dried, as recommended above, when potting off the cuttings. Large pottings must be avoided. It is safer to repot two or three times during the summer. The roots are so delicate that they are very apt to perish in large pots. At every potting use plenty of drainage, and do not remove any from the ball. By leaving all that will adhere every time, a centre of drainage, as it were, will be carried up almost to the base of the plant.

WATERING.—Water must always be applied with caution. In the growing season give sufficient to wet the earth moderately, and then let it at the surface become dry before the watering is repeated. In autumn and winter the water must be much reduced. By this careful treatment this lovely plant may be kept in health, and will bloom freely, thus rewarding the careful cultivator with its charming, fragrant blossoms.

BOUVARDIA LEIANTHA.

(SMOOTH-LEAVED BOUVARDIA.)

This is a more recent introduction, from Guatamala; and a charming plant it is, with a many-branched cyme, or head, with dark crimson flowers. It has the habit of the older species, such as *B. triphylla* and *B. splendens*, dying down to the earth in autumn, and pushing forth numerous shoots from the crown of the roots in spring. This crown of roots may be divided easily, and the plants increased thereby, or the young shoots may be taken off and propagated as cuttings, in sand, under a bell-glass in gentle heat. This species is hardy enough to bear the open air in the borders of the flower-garden in summer, and the roots should be taken up, potted, and kept in any place where the frost cannot reach them; then in March give them water, and place them in gentle heat to start them into growth, hardening them by degrees, so as to be able to bear the open air as soon as the frosts are over. A few may be shifted into larger pots to bloom in the greenhouse, the stage of which will be greatly embellished thereby during the later months of summer. This species, with tolerable management, will grow two feet high, and produce a great number of its richly-coloured blossoms.

T. APPLEBY.

HARDY FERNS.

(Continued from page 396.)

HYMENOPHYLLUM.

A GENUS of very delicate Ferns, containing only three or four species in cultivation, two of which are indigenous to Britain. The name is derived from *hymen*, a membrane, and *pteron*, a leaf.

HYMENOPHYLLUM TUNBRIDGENSIS.

(TUNBRIDGE FERN.)

So named, because it was formerly found there in great numbers, and that locality was supposed to be the only one where it grew; but it has been found in the hill districts of Yorkshire, and is so plentiful in Ireland, that I have received a large batch of *Trichomanes radicans* from thence, packed in large patches of *Hymenophyllum*. Fronds pinnate, from one to four inches long, dark green; pinnæ forked, pointing edge upright; leaves narrow, and sometimes cut in two at the top, edges spiny. Seed-cases single, on the points of the leaves compressed; when opened they divide in two parts, showing the seeds in a cluster; edges thorny, leaf-stem winged. Root-stock creeping and thread-like. Increased readily by division.

HYMENOPHYLLUM WILSONI.

(WILSON'S HYMENOPHYLLUM.)

This is also a British species, often found growing in the same locality, and mixed with the former species, to which it bears a close resemblance. Fronds lance-shaped, pinnate, dark green, from one to four inches long; pinnæ recurved, and divided into hand-shaped segments, which are cut into thorny points at the edges. Seed-cases single, on the apex of the leaves, entire at the edges; leaf-stems winged. Root-stock round, like a thread, and creeping. Increased by division. The differences between these two closely-allied species are, in the latter the pinnæ are recurved or rolled back, whereas, in the former, the pinnæ point their edges vertically or upwards; then, again, the latter has the seed-cases or involucres quite smooth at the edge, the former being spiny. To find out the differences, the cultivator must use a good magnifier.

I have been often asked, both in private and by correspondents in *THE COTTAGE GARDENER*, how to cultivate successfully these two tiny, filmy Ferns. As I have succeeded very well in cultivating them, I have great pleasure in detailing the means I used, and the method I followed. The first plants I had under my care were those I alluded to above as coming from Ireland, wrapped round the emphatically so-called Irish Fern. I was informed by the collector, an Irish gardener of the name of Doran, that they grow there on a sloping wet bank near waterfalls, generally on the north side; consequently, there were two things they did not like—dryness and sunshine—on the contrary, a moist climate, with plenty of wet at the root, and plenty of shade, were necessary adjuncts to their well-being. Acting upon this information, I filled several large, flat pans with sandy peat and small stones intermixed, upon this I laid the patches of *Hymenophyllum*, packing some soil round the edges, and pressing the whole firmly down to the soil. I then fitted a handlight to each pan, gave a good watering, and placed them in a shady part of a stove. There I sprinkled them with water every day, and soon had the satisfaction of seeing new fronds springing up over every part of the plants. I had them over from Ireland in the spring, and before the autumn I had almost every pan covered with beautiful, healthy fronds. During the summer, I removed them into a deep pit, placing them close to a wall on the south side, so that the sun never shone upon them till

the evening. Whilst in the pit, I removed off the hand-lights, as the shade was quite sufficient to keep them from drying up too quickly. In this pit I have no doubt they would have done well through the winter, but I wanted them to be seen, and so I removed them back again into the stove, placing them at the north side, where no sun could reach them. I have but little hope that these delicate Ferns can be grown in the open air, unless a similar situation can be had as that of their native locality. Such cultivators as do not possess a frame or pit, should place them behind a low hedge or a wall, and keep a hand-light constantly over them, excepting in rainy weather, only hearing in mind that they are not aquatics, and will not exist long in a swamp; therefore, the place, however favourable in other respects, should have the surface covered with small stones, as well as being well undermined.

TRICHOMANES RADICANS.

(ROOTING TRICHOMANES.)

So named by Swartz. Willdenow names it *T. speciosum*, and R. Brown, *T. brevisetum*. This rare and beautiful Fern is a native of Ireland, and is generally known by Fern growers as "the Irish Fern." The generic name is "Hair Fern," derived from *trichos* hair, and *mania* excess; referring to the finely-divided fringe on the seed-cover of some species.

Fronds triangular, many times divided, light green, and almost transparent, growing nine inches high; leaves generally entire, but sometimes cleft at the end; stem of the frond covered with narrow scales; ribs of the leaf winged. Seed-vessels placed singly in the joining of the leaves.

This elegant Fern is always in request with all Fern growers, but it is very difficult to cultivate. Like the preceding genus, it will not bear the dry exposure to sun and wind. It is frequently found growing at the mouth of moist grottoes. At the celebrated Waterfalls, near Kilkenny, it has been seen growing very finely in the space on the rock behind the projecting sheet of water as it leaps over the rocky barrier. In such romantic scenes this lovely Fern clothes the moist rocks with its delicate membranous fronds. The question may well be asked, How are we to imitate such an atmosphere and situation, and so transplant and grow successfully a plant so peculiar in its requirements? At first sight it would seem almost impossible; but careful skill and perseverance conquer many difficulties.

By applying extra heat and moisture, even this desirable and apparently difficult-to-grow gem has been successfully cultivated. Witness the fine specimens that have been exhibited at the different metropolitan exhibitions.

These specimens had been grown in a warm house, in pans, under a bell-glass. I have seen, also, good plants in a Wardian case. Dr. Pitman had, for several years, a good plant of it growing under a bell-glass in his study in Montague Place, Bedford Square, London. In all such places it may be grown. The only instance I ever saw of its thriving out-of-doors was at Rolleston Hall, Sir Oswald Mosely's seat, in Derbyshire. It was, however, covered with a hand-light, and during the growing months was kept constantly moist. The worthy baronet had a bottle kept nigh it full of water, and every time he passed the place gave it a drink out of the bottle. The fronds of this plant, when I saw it in December last, looked fresh and healthy, and were evidently happy under his care. I trust these somewhat rambling remarks on the culture of these three delicate Ferns will be found useful, and will be a guide to such persons as may wish to grow them. T. APPLEBY.

(To be continued.)

PLANTS IN ITALY. — EXPERIMENTS IN HYBRIDISING.

It is a long while since I have had the pleasure of a little gardening gossip on paper, or otherwise, with you. Last winter I was in Rome and the south of Italy, where I remained till called home, sorely against the grain, in April, to join my regiment, the N—— Militia, in which I command a company, and now grow young corporals by way of Scarlet Geraniums, and practise *drill* husbandry exclusively.

In Naples, I saw a great deal of good old Tenore. The talented old man is as fresh and enthusiastic as a boy in his beloved botanical pursuits. I picked up much curious information, and many pretty and curious seeds and plants. At Florence, I gathered the hardy *Opuntia* in its wild habitat (*vile* Strangways), and within a few yards the corn fields were full of the pretty *Clusius* Tulip, white with purple eye. I dug up bulbs in flower, and kept them in a tin botanical case, which preserved the foliage green for some time. This ripened the bulbs, *small* but *ripe*.

The *Papyrus* of Sicily, and the great *Colocasia*, would certainly be hardy in mild parts of England. The *Papyrus* grew away in my waters at W——, last summer; whether it will survive this winter I know not. On reading up a batch of COTTAGE GARDENERS, the other day, which I had not had time to read before, I hit upon your mention of the Geranium seeds, and this inspired me to write you a note. I once sowed a row of *Green Peas* to mystify an old-fashioned gardener, and he certainly did open his eyes when they came up, which they did, and, moreover, flowered and podded a few of them before the year was out.

I got a few months gardening in the summer, and flowered a few seedlings. I crossed the curious, old *Colvilles*, *double and purple* (*Cucullatum* breed, I think [Yes]), by *Anais*. The seedlings were mostly as double as the parent, with better colours; one I thought good enough to keep. *Cucullatum* by *Anais* produced much-improved flowers, deeply empurpled by the cross, and the habit rendered more stocky and floribund. *Anais*, crossed by *Duke of Cornwall*, produced very pretty, compact purples. One, I think, will be a prize. A rich, red-purple, lower petals with large, suffused spots. It is, too, a prolific seeder, and I have a dozen plants up and growing of it. Self-seedlings of *Anais* came, some like the parent, others more like *Victoria*, and others of that class. I believe that all our modern fancies came from *Anais* (and *Queen Victoria*), exceptions being the *Yeatmanianas*, and the dirty-faced breed. Who raised *Anais*? I saw it at a show at the Petit Trianon, in Paris, several years before Henderson got it. I think it was sent by Chauviere. I could not find the owner, or we should have fancies three years sooner than we had. (It is a French seedling, and the mother of *Ibrahim Pacha*, without being a cross.) It is very odd that my lovely *Sidonia colt* will not strike by cuttings. (There are more like it in that respect.) I left home, however, in September, and, perhaps, some may have yielded to my various experiments, in order to propagate it. I got one root-cutting, but it died, and my grafts failed. I seeded both the white and common *Unique*, and left plants of them up. (We never could seed the white *Unique*.) A curious white new sort, called *Virginium*, seeds very freely. (We are very glad to hear it.) I crossed it with several sorts, and have seedlings up. I expect something from this. I am also at *Fair Helen*, at least, the wild Cape one; the seedlings came out all sorts of *Holens*, some with spots, some without, some with long, gaping petals, and some with short and compact; some, also, very deeply jagged, both top and bottom petals. (No Geranium varies in crossings more than *Fair Helen*,

but never produces anything worth keeping.) I have also a large crop of the *Graveolens* breed, to flower this year. I want to work at improvement by successive generations *without* crossing. (*Graveolens*, without crossing, varies as much in leaf as *Fair Helen*, and is capricious about strange pollen.) I think much is to be done in this way with some plants. I got one seed from *Dialematum rubescens*, but my gardenor says it did not germinate; it was a healthy, good one, however, and I have told him to keep the pot and look out for its coming up now. (You will never see more of it.) The absence of the master is certainly not propitious in these matters, however good the man may be, and mine is a capital one, assisting me in all my vagaries, which, save the mark, are Legion.

Splenii and *Dialematum bicolor* are surely the same plant in a *different sporting state*. (Very likely.) We want systematic crossing between the fancies and the big sorts; much is to be done without going beyond this. I only obtained one truss of bloom from your *Fulgidum*, and did not get a cross from its pollen. (*Fulgidum* refused the pollen of all the new sorts we tried.) I saw the plant called *Scarlet Unique*, at Northampton; but it is of the *Ignescens* strain, and no relation to the dark real *Unique*. Henderson has the old *Incomparable*, which is a free seedler of that race. I have never seen the true *More's Victory*. The plant now known by that name is the *Nutans* of Sweet. They are very much alike, but the *Victory* does not *nod*. The said *Nutans* ripened me one seed, and I have a plant from it not yet flowered. It will go hard with me if I do not get *Crassicaule* before the season is over. (*Crassicaule* is at Kew, but it might as well be at Sebastopol as far as these experiments are concerned.) *Shrubland Pet* absolutely refuses to breed. (The more's the pity; but there are other varieties of that breed.) In hybridizing, I always use a magnifying-glass of sufficient power to define pollen grains, and to tell me if there is any hostile pollen at work before I take a bloom in hand. After the anthers are removed from a flower, it is comparatively safe, as bees and other pollen-seeking insects then pass it by invariably, as far as I have observed. I am still of opinion that *Geraniums* forwarded or forced in the stove are much inclined to seed; and, of course, the early ripening and sowing of the seed is of permanent importance.

I have raised some new crossed *Begonias*. Gordon has them all at Chiswick. (He had some of them at the meeting on the 6th of February.) *Acuminata* by *Fuschioles* is pretty and coral-like. The others are amongst *Insignis*, *Manicata*, and *Crassicaulis*. Their foliage is good, but they flowered while I was in Italy. My gardener reported them good. I have three times failed to raise *Discolor-Cinnabarina*. This would be the cross of crosses; nearly hardy, certainly in Devonshire. I sowed seeds of it just before I left England. A seedling from common yellow *Hirsutum*, crossed with the *Woodbine*, flowered last summer; *Hirsutum* the mother. Habit of *Woodbine*, leaf hairy; flowers small, because cramped in a pot; *very sweet*. Thus the father communicates fragrance.

Cheranthus Marshallii gave me, last year, a blossom sporting *half yellow*, of the colour of *Alpinus*—I mean, with a yellow stripe. Mr. Appleby has taken up with the Primrose fancy, I see. I have been at it four years, and told him so. I have only got one *rise* out of them—a lovely paper-white, constantly peduncled, of great size and consistency, and fringed; the whites came out in the third generation; only one or two coloured plants appeared. The Cowslip crossed with the Primrose produced gelatinous amorphous seeds without germ, as distant crosses are said to do. I believe they will cross the other way; but my evidence is not quite perfect.

The plant which puzzled your correspondent, with

yellow egg-like fruit, on a balcony, would be *Passiflora cerulea*, if in Ireland or Devon. This must be crossed by the purple *Granadilla*. The produce might be hardy, and, according to Knight's experiments, the fruit would be good, perhaps improved. *Cerulea* should be the male. (I have failed with this experiment, over and over again.)

I have not yet had time to try any bottom-heat experiments in the open air; but I have done this much: I covered my furnace-holes, which are close together and in a *large* excavation with brick archwork, and made rockwork on it. Everything did admirably in the summer, and I expect the delicate things will stand the winter; for the cavern below is tolerably warm. The double Income-tax, and war in prospect, modifies one's extravagance in these matters.

I fear your *Carrot* and *Parsnip* experiment will fail, the roots being biennial, at least, of the class that seed and die the second year, the seed being manufactured out of the root produced for that purpose in the first year. What would a Carrot do if all the flowers were picked off?

I have this moment received the last COTTAGE GARDENER, and see your description of hybrid *Begonias* at the Horticultural Society's rooms; the last three are mine. I suppose the pretty *Acuminata* one was not in flower. I must do *Incarnata* and *Fuschioles* this year; the produce would leave, I think, scarcely anything to be desired.

I have paid one visit to the Glasnevin Gardens here, and was kindly received by Mr. Moore. When the weather breaks up I shall improve my acquaintance with him, and the gardens, which are good. I got from him an old desideratum of mine—*Mantisia saltatoria*, which appears to be as little known as it is curious and beautiful. (It is at Kew, or was lately.) I fancy it is miffy while dry in the winter, and apt to shrivel and disappear; perhaps such things may be kept too dry. (Exactly so.) The *Gynarium* does well here. Apropos of this plant; both Mr. Moore and myself suspect that male and female plants may come from the same plant *by slips*, as in the Hautbois Strawberry by runners. (We should not wonder at all if it did—an excellent idea.)—GLADIATOR.

THE LAST OF HIS LINE.

(Concluded from page 380.)

By the Authoress of "My Flowers."

It is striking and wonderful to perceive, in the histories of mankind, how many opportunities are given to them of repentance and amendment of life; how many calls and providences they meet with; and how plainly their wild or disastrous career is their own following out, and not the hard decree of Him who "wouldeth not that any should perish," but that all should come unto everlasting life.

Matilda B— became the wife of Mr. Watson. He had a handsome house in a country town through which his coach ran; it was well furnished and appointed. Mrs. Watson had plenty of money, a husband who admired and delighted in her, and every requisite for outward happiness. Sir Charles, as might be supposed, was rejoiced at the unexpected good fortune of his daughter. From vice, poverty, and desperation, she was placed in comfort and respectability beyond all expectation, or, indeed, probability. Far beneath her own rank she certainly stood; but after her past conduct, pride must be set aside, and he must be joyful to feel that she was snatched from ruin, and placed above want and care. Respectable mediocrity far outstrips vicious, unworthy aristocracy, and Sir Charles B—, with all his proud sense of birth and title, was thankful and contented to see his daughter the wife of a coach-proprietor. He paid his first visit to her house doubtless with mingled feelings; but he sat at a plentiful table, drove out in a handsome carriage,

saw his daughter the mistress of comforts and luxuries, and the idol of her husband. After all that had passed before his eyes and mind, what a prize had Matilda drawn in the great lottery of life! Poor man! He saw nothing of the Hand that held out the sceptre of mercy to a poor sinner; all was "luck," "fortune," and the turning up of the die! What a dead blank and frightful chaos must the mind be, which is tossed upon the waves of *chance*, and sees nothing ahead but the confusion of uncertainty and disorder; no hand to open the entanglements, and no voice to bid the storms and waves "be still." The omnipotence and omnipresence of the Lord are the couch and pillow of the believer; on them he lies quietly down, and waits, in simple trusting peace, for the day-dawn of deliverance.

The "good fortune" of Matilda was a reality, but dashed from her lips by her own hand. No change had taken place in her heart; *she* was the same still, and the washing of the outside of the cup could not cleanse the corruption which existed within. The haven of rest in which her bark had taken refuge became a wearisome monotony; and the kindness of a husband who had chosen her in her lowest degradation, raised her to affluence, and loved her through it all, could not attach a cold and depraved disposition like hers. She left him as unconcerned as she had left her father, and betook herself to her old haunts in town.

This stroke was too much for poor Sir Charles; his head bent beneath it, and paralysis seized him. Poor man! he was in Paris, leading the life he liked best; but the news reached him at last, and even the gay, thoughtless life of easy amusement which Paris affords, could not shield him from affliction, or deaden his sense of it. The visit he had paid Matilda in her new and luxurious home, where she reigned triumphantly, and gladdened her father's very soul, was his last sight of her; never again did his eyes behold her, or his thoughts turn to her without agony of mind.

Alone, among strangers, in the pleasure-loving city of Paris, did poor Sir Charles wrestle with sickness and sorrow, while his heartless, profligate daughter, breaking every tie, social and sacred, cast off the affections of those who really loved her, and entered upon a career of madness and sinfulness once more. Well may the heart of man be declared "deceitful and desperately wicked; who can know it?" Well may it be said of him who "trusteth in his own heart," that he is "a fool."

The rod that was to teach Sir Charles B— must needs be a sharp one. Much might be done that he would think "clever" and "sharp;" much that he would fail to perceive was wicked or wilful; much that he would allow for and pass by; but *this* was indisputable. He could neither misunderstand nor gloss over conduct of this kind; it was too keen and telling.

The combined histories of Sir Charles and his daughter, at this point, diverged for ever. The next thing that was heard of her was that she had taken to the stage, and was acting under a feigned name in London. She was admired as an actress; her talents, figure, and air, were sure to make her acceptable to an audience, and her adopted name enabled those who knew her, long to notice her in her fallen and degraded career. For a considerable period the name appeared among the list of actors belonging to the — Theatre; but at last it ceased to be found. Season after season it was looked for, but in vain. A dead and solemn silence seemed to settle upon that misguided woman. Where she went to, what had become of her, no one knew. Her husband was left a melancholy monument of imprudence and shortsightedness, and her place knew her no more.

Poor Mr. Watson did a fatal deed when he married Matilda. What *could* he expect when he went to the altar with a woman whose pursuits and turn of mind he *knew* to be like hers? *Could* he expect happiness, or even common respectability? His friends warned him over and over again; they dreaded the consequences of such a marriage; but they warned in vain. He was fascinated by her, and was blind, deaf, and doting. When she quitted him in cold and unholy indifference, the truth flashed upon him, but it was then *too late*.

"Young men and maidens," there is a word for each of you in the history of this unhappy couple. There is a loud and special warning to young men, to be beware who they choose for their partner in life, and how they undertake that

solemn step. It is of no use to employ soft words in dealing with any strong principle. We must marry "only in the Lord;" only choose God-fearing and God-serving partners, if we hope to be respectable and happy. Let every body ponder this truth, for it is drawn from the Word of God Himself.

Let young women be under subjection to the law of God, whatever their parents may be. Let all who are gaily or wildly disposed, consider and tremble. Let them mark the progress, step by step, of heedless, unrestrained youth, on its downward road to perdition. Let them mark the instances of the Lord's tender concern for them, when opportunities are placed before them to turn from their wickedness and live, and let them embrace them. Every day His hand is stretched out to save, and *none need perish*.

POULTRY IN A CONFINED SPACE.

THERE are very many persons who would gladly keep a few fowls, either for amusement or profit, or for both purposes combined, if they thought they could be kept in health and comfort in a comparatively confined space. In consequence of residing near town, I am frequently invited to visit various suburban poultry-yards, sometimes to prescribe for some disease which has broken out, at others to suggest alterations in the arrangements, or to select birds for exhibition, &c.; these circumstances have given me the opportunity of seeing very many examples of fancy poultry kept in runs of very limited dimensions, and it has occurred to me that a small space in *THE COTTAGE GARDENER* may be usefully occupied with an account of two small yards; one managed with success and profit, under the most disadvantageous circumstances; the other mismanaged with considerable pecuniary loss, under a much more promising prospect.

In a low, damp situation, on the banks of the Thames, in the main street of a suburban village (Fulham) is a small back yard, entirely surrounded by houses, its length is sixty-eight feet, and its width thirty-five feet; one end of this space has been divided into five runs, each twenty-one feet by seven, with its proper poultry house, eight feet by seven and the remainder of the yard, thirty-nine feet by thirty-five, has been left as an exercise ground, where the occupants of each run could be let out in succession; in this place, five varieties have been kept, a considerable number of chicken have been reared, and both the old and young birds have been exhibited. On enquiring, I find that they have been sent to seventeen shows, including most of the larger ones, as Birmingham, Colechester, &c., where they have taken nineteen first prizes, five second ditto, three third, and have been five times highly commended. The varieties kept are Silver-spangled Polands, Spanish, Sebright Bantams, Buff Cochins, and Grey Cochins or Bralumas; the circumstances on which the success has mainly depended may be described in two words: the most unremitting attention to cleanliness, and the avoidance of the slightest approach to overcrowding. The only approach to disease amongst the stud has been in the case of the Polish chicken, several of whom have died when about half-grown; they have been forwarded to me for inspection, and I have found that they have died of tuberculous diseases, a complaint which Polands are very subject to when young, if reared in a damp locality.

This account proves what may be done with good management, even in a very confined space; and much credit is due to Mr. Jones for the demonstration. As a contrast to this scene, let me call attention to another yard, which may be taken as a sample of some dozens that I am acquainted with. A back garden, in a high district near town, open on three sides to other gardens, with double the space of the one previously described, and one variety of fowl only kept, and that the hardest of all, namely, Cochins; the proprietor, a gentleman to whom money is scarcely a consideration, and who has constantly been in the habit of buying the best fowls he could obtain, without regard to price. Here, with every advantage of dry, sheltered dusting places, corn without limit, expensive patent fountains, warm and sheltered houses, &c., the fowls are always ill, and die off rapidly; for they are over-crowded, and the ground is

saturated with filth, consequently, the air becomes vitiated, and every particle of food that they pick off the ground is contaminated; the inevitable result is impaired constitutional power, and disease in all its varied forms.

Those who have watched closely the habits of fowls must have observed, when feeding them, that unless almost starving, they invariably refuse to eat any corn which has fallen in contact with fowl dung; but when they are overcrowded in a confused space, the whole surface becomes saturated with the excrements of the birds, and it is impossible that they can feed without swallowing impurity; the result is evident. I may remark, in conclusion, that where fowls are kept confined, and are unable to obtain their natural variety of food, both fresh vegetables and a small occasional supply of animal food should be given; the first may be given in the form of a bunch of Turnip-greens, or a Cabbage, or Lettuce tied up, so that they can readily tear it to peices, or some Cabbage-leaves may be cut up small; and to supply animal food, a few bones from the table may be thrown down to them to pick, or an ounce or two of shred fresh meat; but as for the tallow-chandlers greaves, so liberally advertised as giving fresh eggs all the year round, avoid them as you would so much poison; bearing in mind the fact, that they are the refuse of the putrefying hoards of the same store-shop. With extreme care, there is no uncertainty about keeping a few fowls in a small space; but unless they are attended to by the owner, I have never seen very confined poultry-yards successful; they must be reared as pets, to be reared to profit.—W. B. TEGETMEIER.

ACACIA DRUMMONDII.

THE writer of this saw several dozens, if not hundreds, of this *Acacia*, sold at a public sale last autumn. He was told the merit of introducing it is due rather to Mr. Low, of Clapton. He (the writer) was told by a florist, who lives by Covent Garden sales, that he, the said florist, intended to have 10,000 plants of this *Acacia* struck from cuttings this spring, to supply Covent Garden with it by the thousand. Therefore, Mr. Appleby is right in his estimate of it at page 375, but not as to its rarity.—SELM.

ON BEDDING-PLANTS AND COLOUR.

MAY I, as an old subscriber and constant reader of your interesting Magazine, be allowed a corner in your pages for a few remarks on bedding plants, and the effects of colours?

The present day has seen brought to perfection the art of parterre gardening, and this is the most interesting kind to all lovers of horticulture, for the smallest spot, well laid out, has equal charms with the largest and most varied.

To people with moderate means at command, the chief means of obtaining success in effect is to stick to tried bedding-plants; and I would divide my remarks into two heads. Firstly, those I have tried and found never-failing; and, secondly, those which I have seen elsewhere, and about which I should be thankful for more information.

The strength of a small garden must depend on Geraniums, Verbenas, and Calceolarias, as from them we can obtain similarity of habit, and the best shades of colour. For colour is the chief object, and I hold to bright contrasts, and not shading with neutral tints; but this is matter of opinion, and I know many hold it to be wrong. Yellow and bright yellow ought to be the ground-work of every plan. At Sydenham it is prodigally used.

The bedding-plants, which are never-failing, may be comprised in a small number. First, for utility, I place the *Alyssum maritimum*, either used as a whole bed, for contrast, or as centres, or borders to other flowers. Being so hardy, so easily propagated, and of so low and close a habit of growth, it beats every other plant of a light neutral tint.

Of Geraniums, nothing can equal *Flower of the Day*, when planted with old plants in the centre and young ones to the outsides of the bed. *Judy*, with its cherry-red, makes a charming opposite bed to *Punch* or *Tom Thumb*; and for a large centre bed nothing can equal *Tom Thumb* and the *Frostic Calceolaria* planted thickly together. At

Goodwood House they use this profusely, and the effect is superb. Opposite to *Flower of the Day*, *Mangle's Silver Bedding* is good, but it wants enlivening with a bright and fancy centre; some of the Oak-leaved Geranium, or *Touchstone*.

Verbenas next claim our attention. So various are they, that it is impossible to select the very best. But for contrasts and good growers, *Brillant de Vaise*, *Defiance*, *Mountain of Snow*, and *Mrs. Mills*, or *Madame Millar*, as a BLUE. *Napoleon* for a DEEP CRIMSON. *Brillant de Vaise* is far the finest Verbena I have seen. It is a better colour than *St. Margaret*, which is saying a good deal, and its truss is good. We want a good blue much. The *King of the Purples*, shown last year at the Regent's Park show, was capital for colour and habit, apparently. The *Mellendris* Verbenas make good edgings, but will not do for beds.

Calceolarias, as I said before, should form the ground-work of every parterre. I think they can hardly be grown too much. The brown one (*Sultan*) is a good grower, and capital colour. *Amplexicaulis* I do not like, though the tint is beautiful.

Petunias, in general, are bad, especially in a moderate-sized garden. In wet weather they are so shabby. The best to stand weather, and for general appearance, is the *Crimson King*.

Blue is the most difficult colour to obtain satisfactorily, and I know only the *Lobelias* that can really be trusted. *Salvias* in a long row do very well, but from the scantiness of bloom they are quite inadmissible in the square or geometrical garden. The blue of the *Salvia* is the blue we want.

To sum up, then, a garden on a moderate scale cannot well fail with the following beds:—

VERBENAS.—*Brillant de Vaise*, *Defiance*, *Mountain of Snow*, *Mrs. Mills*, *Napoleon*, *St. Margaret* or *Madame Millar*, and a mixed bed of the same habit.

GERANIUMS.—*Flower of the Day*, *Judy*, *Tom Thumb*, *Mangle* with a varied centre, and a centre or centres of *Scarlet Geraniums* and *Yellow Calceolarias*.

CALCEOLARIA.—Beds of *Sultan*, *Frostic*, with *Alyssum ad libitum*.

PETUNIA.—*Crimson King*.

LOBELIA.—*Eriurus compacta*.

Group these rightly, and I think they will be very successful.

Now for a plant or two, secondly, that I have seen and not tried. If any of your readers can say a word about them, it will be so much the better.

There is a brown annual called *Perilla*, which groups well with any annual, as its leaves intermingle, and it has no flower, but I think it is not generally grown.

A beautiful combination is used at Trentham, of the *Forget-me-not* (*Myosotis palustris*), and the Musk plant. They are grown in alternate patches, as borders to large beds. In small beds they are not admissible, as the tints are not bright enough. Can you enlighten me on the best mode of growing and propagating them? and what soil suits them best?

Another plant, not half enough used, is the *Humex elegans*. In vases, every one knows it is most elegant and effective, but also as the centre of beds it has a remarkably good appearance.

The *Golden Chain Geranium*, at Trentham, is also used much and well, as the lowest tier in colour of their beautiful flower-walks—if one may use such an expression. Nothing can equal the beauty of these gradations of colour as they are there used along the straight walks in the fruit-garden.

Hoping that the trifles I have descanted on may be worthy of a notice in your pages, I must conclude my remarks as—A SPECTATOR.

MISTLETOE EATEN BY ANIMALS.

I RECOLLECT, one hard winter, having set four men with ladder, saws, chisels, and mallets, to clean off enormous Mistletoe bushes from an Apple-orchard. They were nearly three weeks clearing it off, but it was like love's labour lost; for Mistletoe cannot be eradicated, if once it gets the mastery,

without cutting off the limbs on which it grows. It is like Horseradish, the smallest bit of its roots will sprout. We had some earloads of Mistletoe which we mixed in faggots; but cows, horses, and sheep partook of it largely without any harm; but, then, they were "Hercfords," and anything connected with an orchard will never kill a true Hereford, either man or beast.—D. BEATON.

THE LAUGHING ARABIAN PIGEON.

FROM some notice which appeared in your columns I am induced to address you. I have some Laughing Pigeons, and besides the novel cry they make, they possess merits of great importance, for, as breeders, they surpass all other kinds ever kept, and may be called the *Hamburgh* or *Everlasting-layers* among Pigeons. As a friend of mine remarked, he never saw any birds like them for laying, and they are the best of nurses. They will sit on three eggs, hatch, and rear them. Four young ones, I find, are too many for two pigeons to rear, and what surprises sundry friends is, that during all this cold weather they have been breeding, and have reared their young, as I have now a pair all feathered, and another pair next to just commencing being feathered. This, I think, is something in their favour, and I am sure that your readers who are pigeon fanciers, would, like me, if they only knew them, be glad to keep them.

I also find that as soon as they see any light they immediately begin to cry, thus making them as good as a dog. Considering these few lines would interest many of your readers, I deemed it well to place them at your service.—AN OLD SUBSCRIBER.

[We have some of these Pigeons, and they have bred through the winter, notwithstanding its unusual severity.—ED. C. G.]

MR. WILD'S CHINESE PRIMROSES.

HAVING been connected with the fruit, flower, vegetable, and seed trades upwards of thirty years, in this my native town, I did not expect to be spoken of by Mr. Beaton, in his report of the show on the 6th of February, as "*a Mr. Wild*," who had made improper use of his name, which, if allowed to go unexplained, would load the readers of *THE COTTAGE GARDENER* to suppose that I had been pulling off an inferior article with Mr. Beaton's name. Now, the fact is, I purchased the original stock of Primulas, in plants and seeds, of Mr. Latter, who, at the same time, gave me the testimonial in question, without which I should not, perhaps, have come to terms; but having done so, I considered the testimonial as much my property as the seeds and plants, and at perfect liberty to use as I thought proper.

After this explanation, together with my friend Latter's handsome and tradesman-like certificate, I hope that Mr. Beaton will have no further cause to complain of "*a Mr. Wild*," of Ipswich, who holds in grateful remembrance the many acts of kindness received from him during his residence at Shrubland, in valuable advice and assistance on a variety of matters connected with horticulture, more especially the building and heating a hothouse, and the establishment of a Cucumber Society; for all his kindness and hospitality I thus publicly tender my best thanks.

In conclusion, I would just add, that I met a party of "frozen out gardeners," yesterday, and many were the jokes passed upon me, as to the mud at Balaklava, one of my friends requesting me to write to Mr. B., begging of him not to send me there till the weather breaks.—THOMAS WILD, Ipswich.

[This explanation is satisfactory. Mr. Beaton, of course, knew nothing of Mr. Latter having parted with his stock of Primroses to Mr. Wild; but are we quite sure that a testimonial to the former is transferable,—so much depending upon the cultivation?]]

ARRANGEMENT OF CEMETRIES.

As the formation of Cemeteries, or Burial-grounds, in connection with large towns, is now becoming general, I beg permission, through your Journal, to offer a few remarks upon the order, neatness, and regularity necessary to be observed in them.

I do not mean to enter further into the style or manner of laying-out Cemeteries, than to say that they ought to be tastefully arranged and ornamentally planted. I allude, in general, to the disposition of tombs and mounded graves, but especially to the management of mounded graves, which too commonly present a slovenly and careless appearance. In cases where I have been consulted, I have recommended the tombs and ornaments to be disposed in regular order along the sides of the roads and walks, as well as in the vicinity, of the chapels, and in all convenient places, so that they may readily be seen by the visitor as he passes along; and the mounded graves to be arranged in regular lines within the enclosure formed by the tombs. This, of course, ought to be done before any interment is allowed, and nothing is more simple, nor more easy, when once properly understood.

The spaces or widths for graves ought to be lined out in correct order, and edged on each side with stone, appearing four inches above the ground, and one-and-a-half, or two inches in thickness; or, when stone is thought too expensive, turf may be used instead, placed edgewise, or perpendicularly, and of the same height as that recommended for stone, but whether stone or sod is used, the top sod, which is employed to cover the grave, must start from each edging, so as to form a low and neat curve. When this is done, relations and friends may be allowed to pay their last tribute of respect by planting a few patches of some favourite flower here and there; such as the *Lily of the Valley*, *Violets*, *Heartsease*, and *Forget-me-not*. But the introduction of trees and shrubs ought not to be allowed, as they, in time, create confusion, and ultimately destroy the effect the designer had in view.—JOSHUA MAJOR, *Knostonhorpe, near Leeds*.

PRUNING OVER-LUXURIANT POTATO-STEMS.

LAST season I planted some Scotch Red Potatoes, and they came up and grew very strong indeed, until the disease showed itself in the plants. As soon as I saw evidence of its occurrence, I cut the haulm to within ten inches of the ground, and as Vines are generally pruned to a bud or eye; they again broke laterally very strongly, and then the disease manifested itself as before. I again applied the knife, and kept on the same pruning until the frost cut them down in November. I then dug them up, and had a first-rate crop of sound Potatoes; not one bad tuber amongst them, which my neighbours can testify, if necessary.

All the Potatoes that were growing around were severely injured by the disease, and many of them were bad in my own garden that were not treated as the above.—EDMD. FRICKER, *Beckington*.

STOPPING THE CRACKS IN A GREENHOUSE FLUE.

SEEING you advise a correspondent to cover a smoky flue with cement, I have used "fire-clay" for near the fire, and good, sound mortar for the other part. I find the clay retains the heat, and does not crack. It will get "red hot," and never let out gas or smoke. I had some cement over my flue, and found it cracked when it got hot, although it was *well made*, and sand put into it as you recommend. I also painted it over with liquid "fire-clay," to fill up any cracks that might want filling up, where I could not get the thick part. It is to be mixed in the same way as cement, and it will set in half-an-hour, and you can put fire to it as soon as you like.—C. ARTHUR BOOTY.

THE FRUITS AND VEGETABLES AT THE LAST SHOW OF THE HORTICULTURAL SOCIETY.

Will you allow me to write a few words in explanation of the *seeming* difference between my report of the meeting of the Horticultural Society, on the 6th of last February, and the remarks made on that meeting by "A Market-Gardener," at page 398. The difference in most of the forced vegetables which are sent to Covent Garden Market, from those sent to the tables of the high nobility in the country, is as much as the state of the market stand in London is from a flower-garden; so that which is best for the one or the other, is only a relative or negative comparison, if you will, and not which is the best of the two. If I were to embark my capital in market-gardening, the chances are that I should figure in the Bankruptcy Court in two or three years. Nevertheless, I am quite sure that I, and other private gardeners, know how to judge, how to force, how to cook, how to dish, and how to report on forced vegetables and fruits, as they are best relished by the higher classes in this country, as well as any man who ever stood in Covent Garden market, or any other market in this country. Let us now rub noses. You say—

"Mr. Tillyard's *Pears* bore the same comparison to common *Pears*, as the beasts at Baker-street Cattle Show do to common cattle." To be sure they did, if you allow "common *Pears*" to be what is common in Covent Garden; but let the comparison extend to the fruit-rooms of the nobility, and you are as far wrong as the *Poles* are asunder.

"A few good *Pines*, but nothing extra," is the next remark, in order; and I answer by a question—Did you ever see a better, or a more regularly-swelled *Pine* in February, than one of the kinds which was called *Charlotte Rothschild*? The rest of the *Pines* were good for the season, but not extra good, as you said. Of the *Grapes*, you say some were "very good;" but were they not *all* very good? Or if they were not very good, who sent the bad ones? Did you ever see any *Grapes* so good, as the worst of them, in Covent Garden market after Christmas? I have been in the market, occasionally, for the last five-and-twenty years, but I did not see any so good there, even before Christmas; but seeing that you mistook early for late *Grapes*, I hold you not to be a judge of *Grapes* at all; and what you say about the *Barbarossa Grapes*, must, therefore, count for nothing. I hold with you, that some of the *Sea-kale* was not good, but there was some *Sea-kale* there which you never could have matched in the market for goodness, at any season of the year; without mentioning names, I allude to that which was exhibited in a wooden-box. As to *Asparagus*, gardeners have long since made up their minds, that your Covent Garden "grass," is more fit for producing fibre for the paper manufacturer, than for the tables of the nobility; however, it "takes," and you are right to supply it as you do, but that does not qualify any of you for judging good *Asparagus*. The same remarks apply to the *Mushrooms*, and ditto to *Celery* and *Rhubarb*. It is not for size or for weight that such articles are so much esteemed in the country; but if you can "beat gentlemen's gardeners by odds" next winter, with colour, flavour, and succulency, in your fruit and forced vegetables, I shall feel proud in handing you over the heads and shoulders of the whole fraternity.

D. BEATON.

COPROLITES.

It may not be generally known what Coprolites are. They are the excrement of fishes, and are small brown or black rounded nodules, lying in beds, or dispersed throughout the shell deposit, locally called "crag," on the coast of Suffolk. This deposit extends along the sea-line from Walton-on-the-Naze, in Essex, to Lowestoft, and portions of it are met with on the Norfolk coast. In some places it shoots out ten or twelve miles inland. Usually, the crag is covered with a stratum of gravel, at other times it appears on the surface, and the plough, as it passes through the soil, turns up the shells and other marine fossils.

Of late, Coprolites have been sought for by our farmers, and made a profitable source of revenue. Within a short distance from my residence, as many as between 200 and 300

persons are employed in digging for them; these are mostly labourers out of work. One farmer has just set on six fresh hands, and another has obtained leave from his landlord to break up and turn over five acres to get out the treasure. The men work in couples, one digging up the crag and filling the sieve held by the other to separate the shells and sand. The Coprolites are then thrown into a heap, and when a sufficient quantity are obtained are shipped for London, where they are manufactured into manure. It then resembles, in colour and texture, Scotch snuff, and is admirably adapted for mixing with guano, to which purpose there is but little doubt that it is often applied, the almost only perceptible difference being that the guano gives out a strong effluvia of ammonia, whilst the Coprolites yield little or none. The price obtained by our farmers is £4 per ton, delivered on board the vessel.

Coprolites, as I have remarked, are rounded nodules; they range from the size of boys' marbles to those of Turkeys' eggs; many are oval shaped, and a few cylindrical. When broken with a hammer, they are found to contain small fishes and crustacea. If the Coprolites were lying in uniform strata, the digging for them would be a greater advantage to the farmer, by the regular turning over of his land; but this is not the case, they are found oftener in detached beds, as if the spots were the favourite resorts of the fish when living.

There are two deposits of the crag, one the coralline or white crag, which is the oldest and lowest, and it appears to have tranquilly settled down; in this, the Coprolites are seldom found, but the shells and fossils are more numerous, and in a higher state of preservation. Here corals exist, some branching upwards, others lying horizontally; the latter resemble a kind of *tufa*, and it is often so hard, that it has to be separated by crowbars, when it comes off in flakes or laminae (clinkers, the workmen call them), and a clinker, two or three feet in diameter, will exhibit on its surface, perhaps fifty varieties of fossil shells, mostly standing out in relief upon it; and these clinkers furnish a good example of the strata, and are worthy of a place in every geological collection or museum. This coralline formation will probably be turned, one day, to a more profitable account, in making of lime or cement; at present, it is used for mixing with manure-heaps, as top-dressing to clay lands, and as an alternative to soils.

The upper or red crag is more easily worked. It contains most of the fossils found in the lower beds, and has, apparently, been much disturbed and tossed about, as its component parts are more comminuted and water-worn.

It is a favourite amusement with our young geologists, ladies as well as gentlemen, to go out for what they term "a day's eragging," that is, to form small pic-nic parties to some favourite locality in search of fossils, and few are more eager or persevering in their pursuits; they work till pleasure becomes a toil, and usually return home delighted and weary, and not the cleaner for their day's excursion.

Thus we have hidden riches still in our soil, and which are placed there by a bountiful Providence to reward the labours of men of industry, and the researches of men of science.—S.P., *Rushmere*.

[The addition of Coprolites to our list of manures is one of the most interesting of the contributions of modern science to the cultivation of the soil. The dung of fish destroyed by the Deluge are now collected, and are fertilizing our fields. That they are valuable as a manure has now been fully proved, and they are valuable, because they contain much phosphate of lime, the same salt which renders bones so beneficial when employed to our own crops.]

The Coprolites are evidently the dung of some fish of the shark species, and the phosphate of lime is the remains of the fish the shark had preyed upon. They are very like pebbles, but less cold to the touch, and when broken the difference is still more apparent. The Coprolites inside are of a chocolate-brown colour, and when rubbed very strongly on a hard surface emit a smell difficult to describe. Mr. Potter states that they are composed of

Phosphates of lime and magnesia	..	..	..	56
Carbonate of lime	..	..	..	15
Matter insoluble in dilute muriatic acid	..	..	..	19
Organic matter and water, inseparable at 400°	..	..	..	1
Water	..	..	..	2

Whoever wishes for more information on this subject, will find abundance in Professor Buckland's *Bridgewater Treatise*, "Geology and Mineralogy considered with reference to Natural Theology." We will only give from it one extract:—

"Discoveries have recently been made of Coprolites derived from fossil fishes. Mr. Mantell has found them within the body of the *Macropoma Mantellii*, from the chalk of Lewes, placed in contact with the long stomach of this voracious fish: the coats of its stomach are also well preserved. Miss Anning, also, has discovered them within the bodies of several species of fossil fish, from the lias of Lyme Regis. Dr. Hlibert has shown that the strata of fresh-water limestone, in the lower region of the coal formation, at Burdie House, near Edinburgh, are abundantly interspersed with Coprolites, derived from fishes of that early era. Sir Philip Egerton has found similar fossil remains mixed with the scales of the *Megalichthys*, and fresh-water shells, in the coal formation at Newcastle-under-Lyne. In 1832, Mr. W. C. Trevelyan recognized Coprolites in the centre of nodules of clay ironstone, that abound in a cliff composed of shale, belonging to the coal formation at Newhaven, near Leith. I visited this spot, with this gentleman and Lord Greenock, in September, 1834, and found these nodules strewn upon the shore, that a few minutes sufficed to collect more specimens than I could carry; many of these contained a fossil fish, or fragment of a plant, but the greater number had for their nucleus a Coprolite, exhibiting an internal spiral structure; they were probably derived from voracious fishes, whose bones are found in the same stratum. These nodules take a beautiful polish, and have been applied by the lapidaries of Edinburgh to make tables, letter presses, and ladies ornaments, under the name of beetle-stones, from their supposed insect origin. Lord Greenock has discovered, between the laminae of a block of coal, from the neighbourhood of Edinburgh, a mass of petrified intestines distended with Coprolite, and surrounded with the scales of a fish, which Professor Agassiz refers to the *Megalichthys*."]

QUERIES AND ANSWERS.

GARDENING.

LENGTH OF PIPE HEATED BY A BOILER.

"Please say what length of four-inch piping a boiler of the following dimensions should heat, viz., saddle boiler, three feet six inches long; width, two feet four inches outside; twenty inches wide fire-place; and thirteen inches deep; two flows, and two returns.—TROUBLESOME."

[We should say between three and four hundred feet or more. The general rule is, that if there are five and-a-half feet of boiler surface exposed to the action of the fire, it will heat three hundred feet of four-inch pipe; if seven feet of surface of the boiler are so exposed, it will heat four hundred feet. The size of the boiler is of little importance, for its power depends upon the amount of its surface acted upon by the fire.]

DESTROYING WORMS.—RECOVERING FROZEN PLANTS.

"I have a garden infested with worms, in consequence of its contiguity to a churchyard. The borders are filled with herbaceous plants and bulbs. I wish to know whether the whole of the garden beds and paths may be soaked freely with lime-water without injury resulting therefrom to the plants? There is an edging of box.

"In the case of frozen plants, is it not desirable to keep them covered until the temperature is higher? Would removing them in the frozen state, from a frame to a room, moderately lighted, but not warmed, be impolitic?—W. H. O."

[You may safely make use of the lime-water over all your beds, borders, and paths.

When plants are frozen, the best chance of saving them is to allow them to thaw gradually, and in the dark. We have found a cellar answer excellently for this hospital-

practice with greenhouse plants. We have kept the plants in the cellar until the frost was gone. Then returned them to the greenhouse at night, and kept a shade over them, such as a silk pocket-handkerchief, for some days.]

NUMBER OF EYES IN POTATO SETS.

"Would Mr. Errington kindly oblige a reader of your valuable periodical, by favouring him with a reply which is requested, in giving his personal experience in the cropping of early Potatoes. Does Mr. Errington give preference to the mode adopted by a correspondent, in the number of December 29th, of the year 1853, under the title "Potatoes for Ever," where the correspondent recommends leaving but one shoot, or sprout, upon those sets which are the size of a small hen's egg, and two shoots to those which exceed that size? or whether Mr. Errington's experience has gained still better results, in a different mode of treatment?—A FOREIGNER AND READER."

[R. ERRINGTON will, with great pleasure, offer "A Foreigner" his opinion as to the Potato case about which he desires information. The fact is, that the number of sprouts which ought to be left depends much on the kind. If I plant what is called "*a Radical*" in these parts, and an *Ash-leaved Kidney*, each of the same size, and each possessing one sprout only, the probability is, that I shall get about half-a-dozen nice Kidneys, whilst the Radical will have about two dozen, and those of all sizes, from a duck's egg to that of a crow. Potatoes which produce so many on one stem will generally find one or two stems sufficient; those which are the reverse will do with more stems, providing a good crop is the object.]

PASSIFLORA AMABILIS.

"Can I grow and flower *Passiflora amabilis* with the heat I keep up in my house? It is a kind of intermediate one—rarely lower than 40° during winter, and in summer decidedly warm. I purpose planting it in the border at the back of the house (the warmest end near the boiler), free from all draught and cold air; the only thing is that there will be no extra heat at the bottom in the border. I grow a general collection of plants, but manage to keep one end warmer than the other.—H. B."

[We think that in such a position the roots will derive some benefit from the hot-water boiler; and that though the leaves may mostly fall, the older stems of the *Passiflora* will survive, and send out young flower-shoots in spring and summer. Had we any doubt, however, we should use *P. Billotii* instead, which would thrive well, without any doubt.]

SOWING MIGNONETTE IN WINDOW-BOXES.

"Would you be good enough to tell me what time I should sow my boxes of Mignonette. I have three sets of boxes for my windows, and I want the first set to be in flower by the end of May, and the other two sets to follow in succession; to continue in flower as late in the season as possible. Of course, the boxes will have to stand outside the windows, as soon as the seed is sown, as I have no other place for them.—A COTTAGE GARDENER."

[Could you set your boxes inside the window, we would say sow in the first week of March, and only place them outside at the beginning of May, or to give air on a fine day. If you must sow outside, the end of March, or beginning of April, will be soon enough. Sow again about the middle of May, and from the middle to the end of June.]

PLANTS FOR THE DINNER TABLE.

"I am required to furnish, say twice or three times a week, a pair of plants for the dinner-table; they are to be very nicely in bloom, and must be the best of their kind; they are intended to be placed in two large silver stands, made in the shape of a Magnolia flower, and in order to fit them, must be grown in pots not more than four-inches-and-three-quarters wide inside.

"What I require is a list of such plants as may be suitable for the purpose, with a few cultural hints, as to the

possibility of getting nice, dwarf, healthy, compact plants in such small pots. I apprehend they will be more in request in May, June, and July, than any other part of the year, but occasionally all the year round.—A YOUNG GARDENER."

[All plants are more or less injured from standing long in such places, and, therefore, soft-wooded plants will be the most useful. For the three months mentioned, some annuals, as *Nemophila insignis* would look well for May. *Cinerarias*, *Geraniums*, and *Fuchsias* would furnish nice compact plants for all the three months. In fact, there is not a soft-wooded plant generally grown, but would be nice and stubby in such a sized pot, if properly stopped, and plenty of air given. For the summer months, one whole tribe of small-growing *Achimenes* would suit admirably; the bulbs being placed rather thickly, and part of the shoots allowed to grow upright, and the others to hang down over the vase. Bulbs of all kinds, and chiefly of *Amaryllises*, would come in well in winter. Lists were lately given for window-gardening for each month, and where there is a greenhouse and forcing-house, that may be much increased, the only thing is just to grow a sufficiency of plants in such a sized pot. To give you more earth room, you might substitute zinc for earthen pots.]

HEATING A GREENHOUSE FROM A KITCHEN BOILER.

"In giving advice to a correspondent in the November part of your valuable publication, a hint was thrown out as to the use to which a kitchen boiler might be put in the heating of a small greenhouse. I have a kitchen wall with a southern exposure, within which is the boiler attached to the grate. The difficulty I have is, how should I make the said boiler available, it being two-and-a-half feet or so above the level of the ground outside the wall. If it were so many feet below it I would have none. My idea is, that the heated water will not descend and return to the boiler; or, in other words, will not circulate; and, in order to obviate this, I should build a dwarf, or retaining wall, and fill up the ground within it to a level with the bottom part of the boiler. If this is correct, what is the best material to fill it up with? The width of the house to be ten feet, and length eighteen. The roof I should wish would be such as running from front to back. What size ought I to adopt, having a rod of iron running horizontally along the centre?"

"If I am necessitated to fill up the ground, as above stated, I shall have a short-coming of a portion of the height of the kitchen wall. Could I not make up this with wood, leaving openings, to be shut when required, for the ventilation, covering the outside with asphalt, such as is used for roofing purposes? What kind of glass should I have, and the size of the pane? Should the front sashes move on their centres, or be hung with hinges at the top? What height should these front lights be, and how many?—A COUNTRY SUBSCRIBER."

[There has been much said lately that just meets your case. You may raise the floor of your house, or part of it, if you please; but, provided the pipes are placed high enough on piers, there is no absolute necessity for such a thing. Will there be no difficulty in fixing pipes to the boiler you now have? That difficulty might be lessened by having merely one-inch pipes fixed to the boiler, and connected with four-inch pipes in the house. If one of these was placed near the top of the boiler, and the other near the bottom, the pipes in the house might be on a similar level; in fact, must not be higher, if the boiler has a moveable lid. The circulation is generally quicker when the pipes rise above the boiler; the lowest part of the pipes being, at least, as high as the top of the boiler; but this you cannot do unless your boiler has a close top, and is fed by a cistern considerably higher than the highest part of the pipes. The front wall should be about six feet, and you may divide that into brick and glass, according to your fancy; many would say three of the one and three of the other. If there is a shelf at the front it will be advisable that the window open outwards, it matters not how. Mr. Lane's bar, described the other week, will just suit you. With your iron rod you might curtain it, if it so suited you, half-an-inch in width and depth. You must have means for giving air at back,

either as you propose, or by ventilators in the roof. You will want four or five sashes. You might have no moveable sashes in front at all; but make them fixed to resemble the roof, and have ventilators in the front wall. The less moving of glass sashes the better; for economy's sake, and future repairs.]

HERB GARDENS.

(Concluded from page 406.)

Roses are not herbs; but they employ the skill of the Mitcham herb-growers; scores of acres of roses constituting a great part of his vegetable riches. The roses are grown, not for the sake of their flowers, but for the essence which can be extracted from them. The rose-fancier need not be told that the varieties of his favourite flower are very numerous, and that while some are distinguished for delicacy of form and exquisite tints of colour, others are more rich in perfume. Of course, the least costly varieties, so that they possess the proper extractive qualities, will be sought by the rose-water makers; for, although rose water is already dear enough, it would be yet more so, if choice roses were employed. About the months of April and May, men, women, and children assemble in the rose gardens, pick the delicate petals of the roses, deposit them in large bags, and convey them to the place where the distillation is to be conducted. The distillation is managed carefully, but with simple apparatus. Rich and fragrant as this rose-water is, it is as nothing compared with the attar of the gardens of Ghazepore and Fayoum. The distillation from these eastern roses is left to stand. In early morning, when the nights are still cool, a delicate film is found to have arisen to the surface of the rose-water; this is removed by a feather, and carefully deposited in a small phial. Another night's rest enables the rose-water to throw up a second dainty film: another removal takes place, and so on, day after day, until the phial becomes filled with its precious treasure. The phial is placed for a short time in the sunshine, and the attar arrives at perfection. A prodigious consumption of materials is requisite: one lac (a hundred thousand) of roses to produce one tolah (a hundred and eighty grains) of attar! The rose-grower's arrangements at Ghazepore seem to be remarkable. The land near the town is laid out in rose-gardens, each rounded by high mud walls, and prickly-pear fences, to keep out cattle. The gardens belong to Zemindars, or land-owners, who plant the rose-trees at the rate of about two thousand to an English acre; they let out the land and the rose-trees to cultivators at a yearly rental. The distillers of rose-water buy the roses when at a proper state, cause them to be gathered, and conveyed to their distilleries. Rose-water of various degrees of concentration is distilled, and the attar prepared as already stated. So precious is this true cream of roses, that the market price has occasionally been six times that of an equivalent weight of pure gold. The rogues adulterate it, we may be sure, by means of sandal oil, sweet oil, and other substances. The essence of a thousand roses are contained in about a quart of the best rose-water, after the small amount of attar has been removed. Mitcham, though not comparable to Ghazepore, can produce roses sufficient for a large supply of essence of roses, and oil of roses, and rose-water, and other delicacies, pharmaceutical and perfumetic. One or two of the Mitcham gardens have laboratories attached to them, where essences and oils are extracted; but, usually, the plants are sold to the regular distillers of perfume.

Roses and *Chamomiles* are about as unlike as two plants may be; yet they are both grown here in one garden, and both for the sake of the flower. At one of these Mitcham herb-gardens as much as a hundred pounds a week is sometimes paid to women and children for picking chamomile flowers at the time when the plant has arrived at maturity.

It has been sung of the sweet *Lavender*—

I love thy flower
Of meek and modest hue,
Which meets the morn and evening hour,
The storm, the sunshine, and the shower,
And changeth not its hue.

The leaves and flowers of lavender contain a large amount of volatile essence; the quality for which the plant is mainly sought. Botanically, the lavender belongs to the same tribe as rosemary, sage, basil, and marjoram, in respect to the shape of the blossoms and the stem; but commercially, it has a history and position of its own. Lavender is cultivated, not for the weather-beaten flower-girl, who offers two bunches for a penny in our streets, but chiefly for the distiller and the chemist. The oil of spike, used for mixing with colours for painting, and also in varnish-making, is obtained from the species called French lavender. The well-known lavender-water is not simply the distilled essence, it is an alcoholic solution of the oil of lavender, to which other scents are frequently added. How a pennyworth of dried lavender leaves will diffuse a pleasant odour throughout a drawer of wholesome clean linen, let the tasteful housewife of many an industrious artisan declare.

Liquorice is another of the plants which these herb-gardens produce. *Glycyrrhiza glabra* is the very hard name which botanists have given to this simple plant; but botanists are fond of hard names. The common liquorice root, from which the well-known black extract is obtained, grows chiefly in the south of Europe, from the Crimea in the east, to Portugal in the west. One hundred pounds of the dried root yield about thirty pounds of the black extract, the Spanish liquorice of the shops. When the extract has been obtained, it is poured into rolls six or eight inches in length, which are bound with bay-leaves to prevent them from adhering together. The crude juice contains many extraneous substances, which are removed in the production of refined liquorice, a softer substance, prepared in more cylindrical form. The liquorice of the English herb-gardens, however, is the stick-liquorice of our acquaintance. It is grown in many parts of England where a rich black mould is to be met with, but it requires very careful cultivation. Near Pontefract it is cultivated chiefly for the preparation of a fine kind of liquorice called Pontefract or Pomfret cakes. Mitcham liquorice is tilled for the sake of the long slender roots, which, at a proper age, and in a proper state, find their way to the wholesale druggists and to Covent Garden Market, and thence to the sick chamber, where a tickling cough has to be combated.

Peppermint is another member of the interesting Mitcham family. Of the dozen or more species of mint known in England, peppermint is second only to the culinary mint or spearmint in value. It has a penetrating smell and a pungent taste; and its pretty little purple flowers deck the garden in August and September. The herb is sold to the druggists, and is by them distilled to obtain oil of peppermint. This oil, used alone, is a valuable aid to the physician; and, when re-distilled with pure alcohol, it produces spirit of peppermint. When the herb itself is distilled in a simpler way, it yields peppermint-water.

The herb-shops and druggists' shops contain numerous plants and extracts from plants, which the every-day world knows nothing about elsewhere. Such substances as horehound, coltsfoot, angelica, and many others, do not seem to be generally recognised as plants at all—they are sweetstiff. Mitcham could, however, tell us a little about such substances. Horehound, for instance, Gerard tells us, "bringeth forth very many stalks, four-square, a cubit high, covered over with a thin whitish downiness," is cultivated for the sake of the extract thence obtained, which is made up into lozenges and cakes and other forms.

One word about the markotable features of these Mitcham herb-gardens. Some of the gardens contain those herbs and familiar plants which have their chief market at Covent Garden, and thence find their way to the dominions of the cook, whether "Good Plain," or "Experienced French;" while others are filled chiefly with such herbs as require distillation before being brought to use. These latter are sold for the most part to the wholesale druggists in the city, who sell them in turn to the rectifiers and pharmaceutical chemists and others.—(*Household Words*.)

AUSTRALIAN CONTRIBUTIONS TO THE GREAT PARISIAN EXHIBITION.

THIS world-wide Exhibition is not attracting that attention which it will "when the green leaves come again," and when peace shall be restored. It is enriched with contributions from the whole civilized portions of the earth; but, on the present occasion, we shall only place before our readers a notice of those contributions forwarded to the Exhibition from our Australian Colonies. Previously to being shipped for Paris, the contributions were exhibited during November in the Museum Hall, at Sydney, and the Chairman of the Committee, Sir Alfred Stephen, the Chief Justice, thus descended of them to the Governor and the visitors who attended on the first day of the Exhibition.

"The Commissioners appointed to superintend the collection and transmission to Paris of the natural and artificial products of this colony, have at length the gratification of presenting to your Excellency and the public the result of their labours. They regret that it has not been more successful—more worthy of the enlightened efforts of your government, to develop and display the resources and industry of this extensive territory; seconded as those efforts have been, in a kindred spirit, by the liberality of the legislature. But it is hoped that sufficient will nevertheless be found to have been accomplished, to justify the course so providently taken; and, if all has not been attained that was expected, to stimulate exertion in future.

"Whatever comments may be provoked by the Exhibition which your Excellency this day meets us to open, I venture to protest against such as shall be founded on comparisons necessarily disparaging. This is still a young community, and the rich and varied productions of art, which readily adorn the industrial expositions of Europe, can obviously find here neither rivalry nor successful imitation. Neither has it been our object to delight merely the eye. While inviting and soliciting contributions in every branch of colonial manufacture, the Commissioners have rather directed their own exertions to the procuring of examples illustrating the natural resources of the country, rich as it is in mineral wealth, and in all else connected with a bounteous soil. The useful, accordingly, has in this collection predominance over the ornamental. And if, in every respect, it be not what might have been realised to the general indifference of our fellow-colonists—for it has amounted to more than want of sympathy—the deficiency must be attributed.

"Such as the Exhibition is, however, it has the merit of being, with very few exceptions, what it was intended to be; one of Colonial productions exclusively. We have, indeed, by permission of the Trustees of the Museum, placed in the hall casts—the gift of Sir Charles Nicholson to the colony—of some of those noble statues, the triumphs of ancient Art, which grace the galleries of Florence and of Rome. There stands here also a modern work (the statue of the great Circumnavigator), which the colony cannot claim, left with us by a sculptor of no mean reputation. But the presence of these, not otherwise inappropriate, may be excused; and there are, I believe, no other contributions strictly foreign. The admirable medallions on the table, executed in this city by Mr. Woolner, may not unfairly disclaim that character.

"The carvings along the gallery, and its light and well constructed railing, rivaling in excellence of workmanship the cornice and pillars beneath, are all Colonial. The designs, by two of the artists of Sydney, for our proposed Exhibition Medals, the elaborately finished specimen of bookbinding, the admirable little model of a gold digger, the models of bridges and of flowers, the articles of saddlery and cabinet work, with the various paintings, busts, and drawings, specimens of picture frames,—all the articles, in short, not already excepted, which surround us, whether deserving or not of commendation, are at least colonial: intended to represent, simply, what our productions are; not what we would have them supposed, if admiration were the object, and not truth.

"Of the articles thus contributed, however, many are not intended for Paris; and some would not be admissible, in fact, at that exhibition. On the other hand, there are several articles promised, or expected, which have not yet reached us:—among them, models of the capacious Dry

Docks now approaching completion; works of such magnitude and importance, as to deserve especial commemoration. In respect of other articles, not a few have been received at the eleventh hour; and of these, while I am now speaking, some are scarcely prepared for exhibition. Under such circumstances, proper classification and arrangement have been impracticable; but the deficiency is temporary, and will shortly be supplied. Our great staple commodity is only partially represented, because the shearing season is still in progress; but effectual steps have been taken for securing samples of different qualities of wools, such as shall do justice to this valuable branch of Australian products.

"We are favoured by Sir Thomas Mitchell, with the model of his celebrated invention, a work strictly colonial even in name. The model is accompanied by a description, explaining the principle and mode of action of this powerful agent. The time is probably not distant, when the "Boomerang Propeller" will be universally known, and extensively adopted; and the world may see the steam vessels of New South Wales, built in her ports, and navigated by the sons of her soil, traversing every ocean with engines of her manufacture, constructed of iron dug from her own mines, and, by the aid of this new mechanism, the fruit of Australian science, distancing every competitor.

"The iron ore of this colony, tested as it has been from the Fitz Roy mine, until lately almost unknown, appears to be of the finest and most valuable character. The specimens intended for transmission to Paris, and now in this hall,—of the ore itself, and of articles manufactured from it,—we will venture to say, are highly interesting: and, as to the former, not to be surpassed in quality in any part of the world. We invite with confidence your Excellency's attention to them.

"Inferior in attraction to the brilliant metal, which Nature has spread over such large portions of our territory, and infinitely less seductive in its pursuit, the solid and hardy Iron of which we fortunately can boast, hidden more deeply in the earth, and requiring more steady industry for its acquisition, may in the end prove to be the most important of all the gifts which Divine Providence has bestowed upon a favoured people.

"Reflections of the same nature occur, in reference to our extensive fields of Coal; new beds of which are continually being opened. Specimens of this mineral, and of our rich Lead and Copper Ores, are also among the articles exhibited—and are by no means the least important of them.

"Of our Gold products, there are in the cases near you a great number of specimens, from nearly all the numerous localities where it has been found; and, in many instances, accompanied by specimens of the rocks and strata in the immediate neighbourhood. Some of these specimens, particularly those of the quartz, veined or studded with gold, are very beautiful; and all of them—whether regarded as a collection, embracing extensive varieties of the precious metal, or merely as individual examples,—will well repay the trouble of examination.

"One of the most interesting (not certainly in external appearance, but by reason of its historical associations) of the objects this day exhibited, is the last remaining portion of the tree near which were buried—the ships then lying in Botany Bay—the remains of *Le Rechercheur*, one of the naturalists attached to La Perouse's Expedition. The name, and portions of a few words, carved on the bark a few feet above the group, are still visible: but the "bush fires" of the natives, from time to time, have much defaced the inscription, and in parts obliterated it. It is recently, only, as I understand, that the carving was observed; or assuredly care would long ago have been taken to preserve the relic from injury. It will now, with your Excellency's sanction, be presented to the gallant nation to which the deceased belonged; and whose achievements in the happy arts of Peace, while her armaments are engaged with ours in doing battle to the enemy of both, the British Empire is shortly to assist in celebrating.

"The Exhibition is indebted to the unwearied zeal, and untiring personal exertions of two of our body, Mr. Moore and Mr. W. Macarthur (the latter assisted by Mr. G. Macleay), for an extensive collection of woods, of which they have procured in the whole above 300 specimens. Mr.

Moore obtained those presented by him in two of the Northern Districts, Moreton Bay and Wide Bay:—Mr. Macarthur his, in the counties of Cumberland and Camden, chiefly from the district of Illawarra. The time occupied by these gentlemen, more or less, in devotion to the work, has exceeded six months; and, from the want of interest evinced by most of those to whom they applied on the subject of their search, from the difficulty of hiring vehicles and workmen, even at a great expense, the limited time and funds at their command, and other causes, they had to contend with obstacles, which less perseverance or skill could not have surmounted. The result is before the public. It would have been impossible, in such a space of time, and at the particular season, to cut down—saw into convenient lengths, bring to Sydney, and prepare for inspection in this room—a complete collection of the trees, which may be met with in the districts mentioned; and still less throughout the colony. But much has been effected towards such a consummation; duplicates being preserved in the Museum, with that object. In the mean time, a great number of distinct species or varieties are here exhibited, not merely (as we hope) interesting to the naturalist, but valuable for various purposes of utility or ornament.

"In a paper presented by Mr. Macarthur to the Commissioners, it is stated that twenty-two specimens are of excellent hard-wood, many of them supposed to possess the essential of durability, in a very high degree:—that twelve will be found suitable for turning, or other manufacturing purposes:—and that sixteen represent woods of considerable beauty, for cabinet and similar ornamental work. One specimen, also, has been ascertained to afford a fine yellow colour, for purposes of dyeing. Mr. Moore has prepared a similar paper, describing the woods collected to the north. These, it should be observed (in consequence of an understanding come to at one of our earlier meetings), have been confined almost entirely to the useful—as distinct from the ornamental—kinds of trees. Nevertheless, his list includes about a dozen, which appear to be well calculated for cabinet work, and furniture purposes generally. Among them, are the beautiful Moreton Bay Cypress; *Orleya* of the same district, producing a brilliant yellow dye from the heart-wood, and a red dye from the bark; the Pine-tree; and others. A kind of "dogbane" is in the collection, which has a bark (according to Mr. Moore) more intensely bitter than the Peruvian, and is said to be otherwise of the same nature. There is also a specimen, though a small one, of the extraordinary "Bottle-tree," of which the height is often thirty feet, by a width of sixteen feet, and the centre is almost wholly an edible pulp. This vegetable curiosity, however, is surpassed by the "Gigantic Fig-tree" of the South, of which one is about eighty-five feet in circumference, and so formed at the roots that a hundred men (it is said) could be effectually concealed there.

"Of building and ornamental stones, there are some valuable specimens. A nearly perfect collection will be observed, of the various geological indications of Newcastle and its neighbourhood. And there is a complete, though small collection, of every characteristic rock, mineral, and fossil, of the several formations known throughout the colony.

"But this address has already exceeded its intended limits. The subject of our Cotton, therefore, our various Cereal products, our Slate and our Marble, must be dismissed with this single passing reference. One industrial production, however, our Colonial Wines, cannot with propriety be so disposed of. Centuries may roll away ere the wines of Australia shall compete with those of France; and to send any of them to that country, if comparison were the object, would be simply absurd. But all manufactures have had their beginning; and we hope, as we grow older, to improve. Some of us, not unaccustomed to the delicious beverages of Bordeaux and the Rhine, think our wines even now agreeable; and those who are of that opinion, as well as those who are sceptics in the matter, we heartily invite to taste (at their discretion) some of the samples which lie before you."

"Of course," says the editor of the *Sydney Herald*, "in a general and necessary cursory review like this, it would be impossible to give anything like a detailed description of the various natural and industrial products presented for in-

spection. This would be the more impracticable, from the fact that the arrangements in many instances are very incomplete, in consequence, chiefly, of a large number of the exhibits having been sent in at a late hour. The extensive collection of native woods forms undoubtedly one of the most important and interesting features in the Exhibition. Whether they be regarded in reference to their adaptability to ornamental, mechanical, or common building purposes, the value of these woods must be very great, though it would be impossible, with the knowledge we have at present, to estimate the extent of their value. A most striking illustration of their great beauty and utility in ornamental cabinet work is afforded in the form of a table, made by a Mr. Wilkens, a German. The surface is inlaid with sixty-four varieties of woods indigenous to the colony, all of which are of the choicest and most fanciful description. Among the cereals are some fine samples of wheat, Indian corn, &c., which are deserving of particular attention, besides numerous other vegetable products of a curious and interesting character, which we have already noticed from time to time in these colonies.

"In the arts and manufactures the contributions are more limited than we could desire, which is owing, no doubt, to our youthfulness as a colony. There are, however, many matters which will attract attention, among which we may instance several splendid specimens of bookbinding, two substantial and exquisitely constructed dog carts, some fine samples of loaf sugar, preserved meats, dyed wools and cottons, biscuits, and fancy bread, pottery, &c. One of the most appropriate and interesting examples of the valuable nature of our iron ore is exhibited in a case of manufactured specimens presented by the Fitz Roy Iron Company. The case consists of an axletree, battleaxe, two anchors, one in the rough and one polished, a gun-lever, and other small implements; together with a pair of highly-finished ivory-handled razors. The whole of these specimens were manufactured from iron, the result of the second process only to which the original ore had been subjected, and are both very beautiful and very interesting. There are also two contributions of tweed cloth, which for fineness and strength of texture are well worthy consideration, with the numerous other articles by which they are surrounded; not forgetting a series of admirable dagguerreotype views of Sydney.

"In the department of the mineral products, the collections are both numerous and valuable, comprising as they do great varieties of fossils, together with a splendid and choice display of gold specimens, from all the diggings in the colony, accompanied by samples of the washing stuff, and the under and over-lying strata, together with diagrams and sketches, showing the nature of the sinking, and the elevation and character of the country where the gold is obtained. There are also some colossal specimens of copper and iron ore, one of the latter weighing about half-a-ton.

"A portion of a very beautiful model of the gold fields has since been forwarded. When complete, it will afford a very perfect and graphic view of our principal gold fields."—(*Sydney Morning Herald*.)

TO CORRESPONDENTS.

* * * We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GREENHOUSE VENTILATOR (*Amateur*).—The best place for it is in the highest part of the roof. We consider it of very small utility to have the front or side-lights to open. The door is always available to admit fresh air; and a ventilator is deemed to let out that which is either over-heated or foul, and that always rises to the top.

POTATOES ON WOODLAND SOIL (*A Subscriber*).—Your newly-grubbed and drained woodland cannot need manure of any kind.

FERNS (*A Subscriber*).—You will see that Mr. Appleby continues his description of and culture of Ferns. The pretty Ferns you have seen at Kew are probably new or unnamed yet. The descriptions, names, and culture of *Lycopodiums* have been already given in THE COTTAGE GARDENER, volume 8th, page 292, and 321, and volume 10th, page 42. The *Hymenophyllum Tunbridgenses* and *Wilsonii*, description and culture, will appear shortly.

MOSS ROSE (*C. W. L.*).—It is so called because of the mossy appearance of its calyx, and other parts. There is as much truth as poetry in the German lay thus translated—

"The Angel of the flowers, one day,
Beneath a rose-tree sleeping lay,
That spirit—to whose charge is given,
To bathe young buds in dew from heaven:
Awaking from his light repose,
The Angel whisper'd to the Rose:
'O fondest object of my care,
Still fairest found where all are fair,
For the sweet shade thou'st giv'n to me,
Ask what thou wilt, 'tis granted thee.'
'Then,' said the Rose, with deepen'd glow,
'On me another grace bestow.'
The Spirit paus'd in silent thought,
What grace was there that flower had not?
'Twas but a moment—o'er the Rose
A veil of moss the Spirit throws,
And rob'd in nature's simplest weed,
Could there a flower that Rose exceed?"

FEEDING SHANGHAI FOWLS.—J. M. will be much obliged by our correspondent K. stating how these fowls are kept by him for twopence per week each.

SHANGHAI HEN EATING HER EGGS (*A Young Poultry-keeper*).—You had better put the eggs under another hen. When a hen once takes to eating her eggs we never knew her to be cured of the bad habit.

DOWNIE'S BEE-HIVES.—As some of our correspondents have inquired where the Downie bee-hives may be obtained, we have made inquiries, and are told by Mr. Westwood that the inventor, Robert Downie, is an ingenious and industrious mechanic, whose residence is Union Lane, Barnet. That he is very neat in his work, and is one of the best hands at making insect boxes, cases, and other entomological traps.

BINDING OUR VOLUMES (*J. C—n*).—Our first volume contains No. 1 to 26 inclusive; vol. ii., 27—52, with a Supplement, and every succeeding volume contains twenty-six numbers. The Index in each to follow the title-page and preface.

BOG SOIL (*J. S. L.*).—Your "black unctuous hog soil" will not do for potting purposes. You must try the recipe for artificial heath-soil, given in one of our recent numbers.

DERBY BLACK-BREASTED RED GAME FOWLS (*An Amateur*).—Write to Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott, Lancashire.

DIOSCOREA BATTATAS (*G. Spencer*).—We have given all the information and references we possess.

ORCHIDS (*A Dublin Subscriber*).—The white circles on the leaf of your *Dendrobium aggregatum* is, no doubt, owing to some specks on the glass. The leaf has been damp, and the rays of the sun being concentrated through the specks has scorched the leaf, and caused the black and white rings. A drop of water remaining on the leaf, and the sun shining upon it, before the drop evaporated, would have the same effect. Remove it, and see the effect. The leaf of the *Aspidium nidus* has had the thrip upon it, which has caused the spots. Your *Drynaria quercifolia*, you say, has lost its fronds, but is now making new ones. Before dividing it, place a little soil upon the rhizoma, and allow it to make fresh roots, then you may divide it safely. After it is divided, place it in a shady place, and frequently sprinkle it with tepid water, till the fronds advance considerably, and are able to bear the full light.

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WEEKLY CALENDAR.

D M	D W	MARCH 13—19, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
13	TU	Necrophagus mortuorum.	29.960—29.881	64—43	S.W.	—	22 a 6	58 a 5	4 21	25	9 46	72
14	W	Staphylinus hrunnipes.	30.019—30.851	64—27	S.W.	02	19	VI	5 8	26	9 29	73
15	TH	Staphylinus Erythropterus.	30.157—30.128	57—44	S.	01	17	2	5 43	27	9 12	74
16	F	Staphylinus pubescens.	30.231—30.070	58—25	S.W.	01	15	3	6 6	28	8 55	75
17	S	St. Patrick.	30.529—30.396	53—25	N.	—	13	5	6 25	29	8 38	76
18	SUN	4TH, or MIDLENT SUNDAY. PRS.	30.212—29.957	53—35	S.W.	19	10	7 sets.	6	30	8 20	77
19	M	[LOUISA B., 1848.	30.141—29.907	45—31	E.	15	8	8	8 a 2	1	8 3	78

METEOLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 50.5°, and 34.1°, respectively. The greatest heat, 69°, occurred on the 19th, in 1836; and the lowest cold 13°, on the 13th, in 1845. During the period 128 days were fine, and on 68 rain fell.

THERE is a book for each season, and a season for each book, and such a mutual fitness occurs between the spring of the year and Westwood's *Butterflies of Great Britain*.* A new edition, in a more portable size, with better-coloured plates, and an introduction by the author, describing the general characteristics of the Butterfly, has just issued from the press. It is a beautiful volume, and one of the most appropriate and most useful of presents that we could suggest to be given to one fond of gardening and resident in the country. If a proof were wanting, it is now before us in a box containing a Butterfly caught in Sussex, on a sunny day in the first week of January, and the envelope of the box inscribed with these two queries—"Is this the common Tortoise-shell Butterfly? and is it not uncommon to find it at such a season?"

We will give the answer from the pages of Mr. Westwood's book, extracting all that he says about this Butterfly, as a fair example of the book's contents:—

SPECIES 3.—VANESSA URTICÆ. THE SMALL TORTOISE-SHELL BUTTERFLY.

SYNONYMS.—*Papilio Urticæ*, Linneus, Lewin Pap. pl. 3. Donovan Brit. Ins. vol. ii. pl. 55. Albin Ins. pl. 4, f. 6. Wilkes Ins. pl. 107. Harris Aurelian, pl. 2, fig. i.—n.
Vanessa Urticæ, Fabricius, Ochsenheimer, Stephens, Duncan Brit. Butt. pl. 19, fig. 1.
Eugonia Urticæ, Hübner (Verz. bek. Schmett.)

"This very beautiful but most abundant species varies in the expanse of its wings from one-and-five-sixths to two-and-one-third inches. The wings above are of a rich orange colour; the anterior dark at the base, with three short broad costal bars, between which the ground-colour of the wings is paler; behind these are three unequal-sized round spots. The exterior margin of all the wings is black, with a row of blue lunules, and two pale slender parallel submarginal lines. The basal half of the hind wings is also black. Beneath, the orange colour is replaced by pale stone colour, and the two smaller posterior discoidal spots are wanting. The margins of all the wings on this side are freckled with brown, having a row of black lunules. Various varieties have been described and figured, in which the black spots are either more or less obliterated, or are enlarged, so as to become confluent. A fine individual of the latter kind is figured by the Rev. W. T. Bree, in the New Series of the Magazine of Nat. Hist. Suppl. pl. 15; and "Brit. Butt.," pl. 13, fig. 13, in which the second and third costal black bars are united, whilst the two round discoidal spots are wanting; the hind wings are uniformly obscure.

"The caterpillars of this species are found on the common nettle in the beginning of June and the middle of August; they are gregarious in the early period of their lives, and are dusky coloured, varied with green and brown, with paler lines down the back and sides, and with the head black, the body beset with strong branched black spines. The chrysalis is brownish, with golden spots on the neck,

* "The Butterflies of Great Britain." By J. O. Westwood, Esq., F.L.S. W. S. Orr and Co., Paternoster Row, London.

and sometimes entirely golden. This golden appearance (which suggested to the early naturalists the names of *Chrysalis* from the Greek, and *Aurelia* from the Latin, names for gold, and which is so conspicuous in the pupæ of this and the other species of this genus) is owing simply to the shining white membrane immediately below the outer skin, which being of a transparent yellow, gives a golden tinge to the former. Its appearance, however, was seized upon by the alchemists as a natural argument in favour of the transmutation of metals; nor was it until the researches of Réaumur in France, and of Ray and Lister in England, that its real nature was discovered, the last-named author having imitated it by putting a small piece of black gall in a strong decoction of nettles; this produces a scum, which, when left on cap-paper, will exquisitely gild it, without the application of the real metal. Réaumur also mentions that, for producing this appearance, it is essential that the inner membrane of the chrysalis should be moist; whence may be explained the disappearance of the gilding so soon as the fluids within the body have been absorbed by the formation of the limbs of the butterfly (*British Cyclop., art. Aurelia*).

"The perfect insect is very abundant, and appears in the beginning of July and September, often surviving the winter, and coming abroad the first warm days, having been noticed in the Isle of Wight even so early as the 8th of January. It is distributed all over the kingdom, extending to the northern extremity of Scotland, in which country it is known under the name of the Devil's or Witch's Butterfly! In the south of Europe it continues on the wing through the winter; and according to Mr. Brown (*Mag. Nat. Hist., No. 9*), it would appear that some of the specimens of this species hibernate in Switzerland, and reappear in the spring.

"Mr. Stephens possessed a most remarkable specimen of this species, now in the British Museum Collection, having five wings, the fifth of small size, being implanted on the disc of one of the hind wings, which it resembles in its markings. It was captured by Mr. Doubleday, near Epping."

Such an instance of the volume's utility, however, gives but a faint notion of its value, and we must linger over it somewhat longer.

The Greeks employed the Butterfly as an emblem of the soul, known to them as *Psyche*. They represented her with the wings of the Butterfly, and portraits of the dead were drawn by them with a Butterfly ascending from the lips. Nor would it be easy to employ a more beautiful or more appropriate simile than the soul escaping from its earthly dwelling as the Butterfly soars forth from its chrysalis state. Nor is this the only image it suggests; and Swammerdam did not use language too strong when he said, that in the development of the Butterfly "we see the resurrection painted before our eyes, and exemplified so as to be examined by our hands."

The authors of the "Introduction to Entomology" have well amplified this idea. "To see," say they, "a caterpillar crawling upon the earth, sustained by the

most ordinary kinds of food, which, when it has existed a few weeks or months under this humble form, its appointed work being finished, passes into an intermediate state of seeming death, when it is wound up in a kind of shroud, and encased in a coffin, and is most commonly buried under the earth, (though sometimes its sepulchre is in the water, and at others in various substances in the air,) and after this creature and others of its tribe have remained their destined time in this death-like state, to behold earth, air, and water, give up their several prisoners: to survey them, when, called by the warmth of the solar beam, they burst from their sepulchres, cast off their cerements, from this state of torpid inactivity, come forth, as a bride out of her chamber,—to survey them, I say, arrayed in their nuptial glory, prepared to enjoy a now and more exalted condition of life, in which all their powers are developed, and they are arrived at the perfection of their nature: when no longer confined to the earth they can traverse the fields of air, their food is the nectar of flowers, and love begins his blissful reign;—who that witnesses this interesting scene can help seeing in it a lively representation of man in his threefold state of existence, and more especially of that happy day, when at the call of the great Sun of Righteousness, all that are in the graves shall come forth: the sea shall give up her dead, and death being swallowed up of life, the nations of the blessed shall live and love to the ages of eternity?"

Entomology is especially useful to the gardener, and it is not too sanguine an expectation, that when it becomes more generally studied, and, as a consequence, the times and places where the insects which prey upon our crops undergo their transformations are better known, the cultivator will be able more readily to escape from their attacks. The gardener will then know how to assail them, so as most effectually to prevent their inroads. Let one instance suffice.

The timber in the dock-yards of Sweden was annually injured to a great amount by some insect, and Linnæus was directed to trace out, and, if possible, circumvent the marauder. He discovered it to be the maggot of a beetle, *Lymeria navale*, and by directing the timber to be put under water during the time that insect is depositing its eggs, and during the time it is undergoing its changes of form, the timber is effectually preserved from its attacks.

Turning our attention, however, exclusively to Butterflies, the subject of Mr. Westwood's volume, we find there are seventy species natives of Great Britain, every one of which species gives birth to millions of caterpillars annually, and all feeding upon some kind of plant. The Cabbageworts are especially subject to the devastations of the caterpillars of the different species *Pieris*. The Apple and the Hawthorn are rendered leafless by a species of the same genus, *Pieris crataegi*; and the pages of the volume before us show how many of our flowers and shrubs are the victims of other species. To acquire a knowledge of the habits only of these, would yield a large harvest of benefit, as well as of most gratifying employment, for it is quite true, that

"to follow only the insects that frequent one's own garden, from their first to their last state, and to trace all their proceedings, would supply an interesting amusement for the remainder of life."

WEIGHT is an all-important feature in the prize *Goose*, and the principle of uniformity of plumage has here been acted on with greater latitude than in the case of fowls. Considering, however, that a combination of all points of merit should be aimed at in every branch of our Poultry Exhibitions, we welcome with much satisfaction the Birmingham rule of the present year, which divides the previously-common class for Geese into two,—one for *Grey and Mottled*; the other for *White*. This should determine the question, and henceforward uniformity of plumage should be insisted on with these birds.

The same relation as to form in which the square-built Dorking or the Shanghae stand with respect to the mongrel barn-door fowl, should good specimens of the domestic Goose occupy towards the ordinary specimen of their family. Low on the leg, with the fullest development of breast, the distinctions of their several varieties being duly preserved, the number of pounds at which they weigh down the scale will then determine the Judges' awards.

Among the *Grey Geese*, the *Toulouse* deservedly stand first. The clear orange-red of their bills, of the orbit of the eye, and of their legs, and the peculiar flatness of the forehead, constituting distinctive points which readily separates them from the common specimens of this colour found in our farmyards. Their superiority in respect to shape is another characteristic of this valuable variety. Deep tones of rich brown should form the plumage of the prize birds of this race; white being only found on the under-part of the body, the tail coverts, and the extremities of the tail feathers.

The *White Geese* are not, in our opinion, divisible into any distinct races; those termed *Emden* and *Improved Irish* being simply the produce of birds carefully selected on account of size. To this statement one exception may, perhaps, be taken as to the peculiar blue of the iris in the *Emden*, which is observable in the young goslings, and continues ever afterwards.

The *Mottled* and *Saddle-backed* birds that have of late been exhibited, being, in very many instances, the result of crosses between the *White* and *Toulouse*, have attained great weight. Presuming, however, form and weight to be equal, we should give the preference over these to the *Grey* or *White*.

The *China Goose* is a rare claimant of honours at our exhibitions, and is certainly specifically distinct from all the foregoing. They are found in at least three sub-varieties—*Red-legged* and *Black-legged*, *Brown*, and the *White*. The plumage of the two first should be shades of brown; their characteristics being a dark stripe of the same colour down the back of the neck, the dark knob at the base of the upper mandible, and the folded

skin beneath the throat. The *White China* have the bill and feet a clear yellow.

Looking to the weights that have constantly been attained of late, adult Geese should be required at not less than 16 lbs. for the gander, and 12 lbs. for the goose; nor should goslings fall much below this estimate. This is a low estimate for the *White* and *Mottled*, though a fair average for the pure bred Toulouse. We speak of store, not fatted condition.

When Geese are exhibited under a year old, the task of deciding on their relative sexes is one of extreme difficulty, and it would, perhaps, be better that the schedule should merely require three birds, without stipulating for sexes.

Ducks are capable of a far more certain classification as to breeds than Geese. The distinction of the *Aylesbury*, the *Rouen*, the *Black East Indian*, the *Brazilian*, the *Call-duck*, and the common Duck of the farmyard, being readily observable.

The *Aylesbury* must have its plumage of a spotless white, the bill pale flesh-colour, and the legs orange. Bills that are stained, or are of any other colour than what has been described above, must at once disqualify.

In the *Rouen* breed, the plumage of the Wild Duck in its relative sexes must be produced. Streaks of white on the face, pale breasts, or the presence of white feathers on any part of its body, are fatal objections.

The weight of both the *Aylesbury* and *Rouen* birds should never fall below 6 lbs. for the drake, and 5 lbs. for the duck.

The *Black East Indian* Duck is considerably smaller than the foregoing, and is remarkable for its peculiar elegance of form. The plumage must be jet black, with a brilliant green tint throughout, not merely in the drake, but particularly also in the duck. Any brown or white feathers disqualify.

The colours of the *Brazilian*, or *Musk Duck*, are in great variety. Beyond great bulk, however, these birds have little to recommend them; and the Birmingham Committee have this year exercised sound discretion in depriving them of their special class, and requiring their appearance in that for *any other variety*. Whatever their plumage, they should be carefully matched, and should exhibit the very marked peculiarities of their race in the corrugated bunch of red flesh on the upper mandible, their skinny face, and the crest elevated or depressed at pleasure at the back of the head. The body is elongated, the legs being disproportionately short.

The *Call-ducks* are either brown or white. In form they stand, in reference to other domesticated Ducks, as the Tumbler does to other Pigeons, being peculiarly round and compact. This resemblance is also continued to the "stop" at the forehead, in marked distinction to the general form of that feature in the Duck tribe.

The Brown birds should exhibit the plumage of the Wild Duck, a deep, rich, purple tint being thrown over the whole plumage. The White variety have bright yellow bills.

We might as reasonably be called upon to give the

points of the barn-door fowl in all its phases of mongrelism, as to specify the characteristics of the "common farmyard Duck." But whatever its pedigree, it is, as already observed, clearly distinguishable from the varieties already spoken of. Believing, that for every economical purpose the pure strains have the advantage, we must not, however, refuse commendation to many pens of merit that have been exhibited in this class; for, beyond doubt, great weights are attainable by the cross-breeding of different varieties, giving us good birds for the table, though, for obvious reasons, to be rejected as breeding stock. It would be well, however, that exhibitors in this class should limit their assertions of merit for such specimens to their one really valuable property of weight, without claiming the position of what is incorrectly termed "*improved breeds*." Thus, at Birmingham, in 1854, there appeared an excellent pen of most evidently cross-bred brown Ducks, to which a prize was awarded, although their owner had done what he could to cause their rejection by the Judges by entering them as "*improved East Indian*."

So unsatisfactory, indeed, are the majority of the particulars furnished by exhibitors as to the age and other circumstances of their specimens, that we have long thought that the catalogue would be equally satisfactory, and the Judges would be less perplexed by the omission of all particulars save the class in which the birds were to appear, and, where necessary, the fact of their being above one year old.

HARDY DESSERT APPLES ADAPTED TO ALMOST ANY PART OF ENGLAND.

As some persons may have still to select and plant fruits, I will run through each family, and point to such as have been found both useful and profitable.

APPLES.—I will now look over our table or dessert Apples. The old *Ribston* cannot yet be dispensed with; the only pity is that it should canker. This is in use from November to April.

Ashmead's Kernel is a fruit of the Nonpareil section, and a very good Apple; but we fear not very prolific. This from November to the end of April.

Borsdoffer Pippin; this I have not grown myself, but am told it is a very good thing, and in use through December, January and February.

Kerry Pippin, unquestionably the best September Apple in the kingdom, and not to be despised in October. No garden should be without this. The tree is, with us, the healthiest of the healthy, and has the best and most fruitful character of wood of any Apple I know. I cannot but think that seedlings from such kinds would be peculiarly adapted for stocks for a dwarfing system; it is probable that we should then want no Paradise stocks.

Macleay's Favourite is a good table-fruit as to flavour, but not a great bearer. This is useful in November and December.

Margill, an excellent fruit of the Ribston class. In use in November and December.

Sturmer Pippin. Of all the accessions to our long-keepers, this stands pre-eminent. No garden must remain without it. It has every recommendation—a healthy tree, good bearer, flavour first-rate, in size and appearance noble, and possessing a sort of freshness

which we shall not readily find in any other kinds. In use from the middle of February to nearly Midsummer.

Syke-house Russet is a very useful thing in the north, but we will scarcely call it first-rate. It is in use through November and December.

Early Margaret, an old and well-known summer kind. For many years this, and that other precocious kind, the *Juneating*, have cheered the heart of many a youngster, who would break through a stone wall to get at the first summer Apple.

Early Harvest, too, is a very nice thing, but soon over. This may, in spite of its name, be counted an October fruit.

Dutch Mignonne is much esteemed by some good judges, but I cannot speak from experience. In use through January and February.

Hughes's Golden Pippin is good, handsome, and a good bearer. This, too, everybody should possess.

Pitmaston Nonpareil is a capital fruit, good flavour, and, as to bearing, is most prolific; is in use from December to April.

Adams's Pearmain is a handsome fruit, and, moreover, of respectable flavour. Those who want to furnish full dessert tables will do well to cultivate a tree of this; for it possesses beauty of a peculiar character; and where two or more dishes of Apples are served, we can sometimes afford to give up half a point as to flavour, for the sake of beauty and distinctness in one of the pair. Thus, say at the end of October, and two dishes of Apples are required; let us then send one of well-preserved *Kerry's*, and a second of *Adams's Pearmain*; or you may give a dish of *Ross's Nonpareil*, with its fine aroma and peculiar Fennouillet flavour, as our great society men term it. By-the-by, the last-named is a very useful Apple, and has a beauty of its own. A sound, russety ground, richly overlaid with gold and crimson; it is, when kept thinly pruned, and nicely trained and dwarfed, a beauteous thing.

Old Nonpareil. We may not pass this time-honoured fruit, which, with all the infirmities of the Ribston, possesses still a native dignity amongst Apples. I ought to have named that the *Ross's Nonpareil* is a December and January fruit, and that the latter is from Christmas to May.

King of the Pippins; one of the most useful Apples in the kingdom. If you have two good trees of this, go into your fruit-room when you will, and these right royal Pippins will almost ask you to dish them up. A most healthy tree, an enormous bearer, good-looking, and respectably flavoured. Who would not have such a crowned head to dignify his orchard, or to enrich his trellisses? I wonder much that our market-men have not planted scores of acres of it. Any man having three statute acres of right fruit loam, and planting one of this, one of the Wellington, and one of the Louise Bonne of Jersey Pear, might stand with his arms folded the rest of his days. This monarch of the Pippins is in use from the beginning of November to the middle of February. Here, again, is a likely thing for stocks, if the pips were sown.

Lamb Abbey Pearmain. What a useful tree? Neat, high-flavoured, the most certain bearer, probably, in the north, and of excellent dwarfing habits. Who can praise it too much? And here I would have it understood, that I by no means feel it my duty to recommend a few "exquisites" alone, such as would be lauded only by a first-rate epicure, without the slightest reference to its general utility, bearing, and other habits. No; we bear in mind the thousands of little gardeners whose limitation as to ground is so severe that they must make a sure hit in what they plant. But this *Lamb Abbey* is an Apple for every one who is thus limited. In use from Christmas until May, or later.

Ord's Apple, an offspring of the celebrated *Newtown*

Pippin, so noted amongst some of the merchant princes of Liverpool, and which our metropolitan friends are by no means ignorant of. This Apple is little known; and, if grown neglectfully, as many grow their Apples, would be speedily despised. But to those who love that smart and brisk character of juice, which I cannot so well describe as by referring to a first-rare Nonpareil in high perfection, I say, plant an *Ord's Apple* on an east wall. This is in use from January to May; but let me here caution our readers not to choose it for beauty's sake; it is about as ugly as *Ne Plus Meuris* Pear; and I need say little more.

Pearson's Plate is another charming fruit. This is, I consider, almost indispensable to little gardeners, and big ones have no right to turn up their nose at it. Neat-looking on the dish, carrying, to the last moment, a fresh appearance, a free bearer, and, from its moderated character of growth, adapted to a dwarfing system, I must beg to recommend it strongly.

Fearn's Pippin is a showy-looking and decent fruit, and although a very old kind, and not particularly high-flavoured, possesses a liveliness and mellowness of flesh which still recommends it to some palates.

Beachamwell is highly spoken of; but for my part, I have no real experience of its character. I am given to understand that it requires a little coaxing, such as an east or west wall in the more northern parts. It is in use through the spring.

Hicks's Fancy, or *Stag's Nonpareil*, is a kind we recommend to all who prefer mellowness and briskness to hard and rich Apples. It is a good bearer, capable of a dwarfing system, and will produce as much fruit on a given space of ground as any other Apple; I mean, as to shading contiguous things.

Our readers will, doubtless, feel assured that nothing can be easier than to swell this list, and thus to give it more apparent importance; our only desire is, to recommend kinds well known through the kingdom by really practical men for their genuine worth. At the same time, we leave it to the public to observe that this is done without the slightest desire to impede the introduction of new and good kinds. We are much in want of this kind of renovation, provided it is done with discrimination and honesty of purpose.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—6TH MARCH.

THIS was the most crowded meeting in my time; but there were not quite so many of the "practicals" there as were at the February meeting; yet there were many more than the usual average of nurserymen and gardeners, young and old, and the Society had to throw open the library, and the room behind it, to make room for the display of plants, fruits, and forced vegetables, in addition to their large meeting-room. All the tables round the rooms, and along or across the middle of the rooms, were so loaded, that the passages had to be contracted, so as that the flow of company put one in mind of the circulation of hot-water in open gutters.

The plants and flowers looked as fresh and gay as if we had no winter at all. The only plants in season which were not represented were *Camellias*. *Orchids* seem inexhaustible; winter or summer they take the lead of all others.

CHINESE PRIMROSES.

My bantering has done wonders among the growers of *Chinese Primroses* at last. I think we had ten or twelve collections of them from as many growers, and there was one kind, and only one, of which there were three plants that came up to my standard in this race.

Just consider, for one moment, this simple and single fact. The Horticultural Society introduced this Primrose from China thirty years since; the gardeners about London are the best gardeners in the world; the Horticultural Society have roused the spirit of emulation with medals of gold and medals of silver, and by hard cash down "on the nail," for these thirty years, but all this practice, emulation, and these awards, have not been so effectual in raising the character of this Primrose, round London, during thirty years, as the bantering of one old gardener against his fellows did in the space of three short years. It would have been just the same if any other old gardener in the country were in my shoes (and could fill them as well!), that is, not spare the rod, and never use it unfairly. With respect to the Chinese Primrose seeds mentioned by Mr. Wild, at page 438, I accept the explanation so far. The reason why I said a Mr. Wild is this, that I did not suppose there could be a person in Ipswich, during my time at Shrubland Park, who did not know how I should act against "tricks on travellers."

RHODODENDRON JASMINIFLORUM.

The newest and most lady-like plant at this meeting, and therefore the best, or premier plant of the day, was an exquisitely beautiful dwarf *Rhododendron*, called *Jasminiflorum*. It came from Mr. Veitch. The way I judge new plants is this, and I am seldom wrong: I suppose a houseful of plants in bloom, and a queen, with two maids of honour, are to pick out the first plant which strikes them most; that is my choice, without considering whether it has this or that point for a florist, or for trade, for the propagator, or for the exhibition tables. This is a dwarf-habited plant, with thick, roundish leaves, not larger than those of *Escallonia macrantha*, and something of that look; there were fourteen or fifteen heads of bloom on it, and ten flowers, on the average, in each head; but they did not look at all like *Rhododendron* flowers; they stood nearly upright, with long tubes, just like a bunch of some large honeysuckle, and the opening or limb of each is as like the face of a large Jasmine as anything you ever saw. The whole flower is purity itself for whiteness, but there is a blush on the face of it in the sun, from the reflection of the anthers, which are scarlet, or nearly so. It will require as much protection, I should think, as a Chinese Azalea, if not more; and I must tell why, as I found all the gardeners there were deceived as to the place it came from. Some said it was from the Andes of Peru; some, from farther south, in Chili; and some, still farther on, in northern Patagonia; but having never seen a plant of that very cast from those parts, and seeing Mr. Veitch's head in the crowd, I made a push to him, and had just enough of breath to ask him "Where is your new *Rhododendron* from?" "From Mount Ophir, in the Straits of Malacca, by Mr. Thomas Lobb." "What is the price?" I asked. "2s. if you want one;" but he would give it to any one of you just as soon.

THYRSACANTHUS RUTILANS.

The next best plant for gardeners was from the Society's collection, and called *Thyrsacanthus rutilans*, a stove-plant of the very first order, which comes from cuttings as easily as *Tom Thumb*, grows as freely as a Mallow, never takes an insect of any kind, nor a blight, and holds on in flower a long time, from January to April; and such flowers! whole bunches of crimson-scarlet tubular blooms, hanging down on long strings, as it were. If there was a large box, or a border in front of a stove to grow this *Justicia*-like plant, then to train up the branches to a rafter like a Grape-vine, it would make the finest stove-climber in the world, after a few years. It could be spurred-in like a Red Currant bush;

the more the better; and in a few years, the plant so treated would reach the top of a long rafter; and when the whole was in bloom, I cannot conceive anything more rich than the hanging continued clusters of bright crimson flowers; but as a pot-plant, nothing of the kind can exceed it in beauty.

ORCHIDS.

The Messrs. Rollinson, of Tooting, sent a collection of six Orchids, large plants, beautifully grown and bloomed, consisting of *Phalenopsis amabilis*, *Cymbidium eburneum*, with two handsome, large, white flowers, having a blotch or tinge of yellow on the lip; a fine thing; a very large plant of *Dendrobium speciosum*, having sixteen or eighteen spikes of straw-white flowers. This is a New Holland Orchid, which will grow out-of-doors in England all the summer, as well as any other New Holland plant. A gentleman told me in the room, that he plunged a pot-plant of it in coal-ashes, under a south wall, last summer, and left it out till November; that it was covered with a frosty rime on the 26th or 27th of October without harm, and that it improved much in appearance during the time; that he kept it with Camellias in a cool pit all this winter; and that he put it lately into the stove, but will have it out-of-doors next summer, to get it on sooner into a flowering size.

Odontoglossum nebulosum, a beautiful name for such a plant. This was a small plant, with only one large, white flower, having the inside barred with brown. *Schomburgkia viola*, the first time I have seen it in bloom, and I prefer it to *S. tibicinis*, though the flowers are not quite so large. The lip is purplish-violet, and the outside sepals and petals, so to speak, are crumpled, and of a rich reddish-brown; the flower stands on a transparent, long footstalk, fifteen of them forming a handsome head "nearer home" than in *tibicinis*. A beautiful large-flowered variety of *Dendrobium nobile*, called *pulcherrimum*. A *Maxillaria aromatica*. A large *Vanda tricolor*, with many flowers.

One of the largest plants of *Dendrobium nobile* ever sent to an exhibition came from Mr. Hammerton, gardener to J. Livick, Esq.; and a large *Phaius grandiflorus*, with fourteen flower-spikes, from Mr. Forsyth, gardener to Baron Rothschild.

There was a plant of *Cypripedium villosum*, with two brown, hairy blooms, from Mr. Veitch; and cut flowers of two kinds of *Vanda tricolor*, and *Mormodes ignea*, a rare thing, from Mr. Pass, gardener to T. Brocklehurst, Esq. of the Fence, near Macclesfield. One of these Vandas was very rich, with a deep purplish-violet lip.

MISCELLANEOUS.

Mr. Veitch sent two kinds of *Franciscea confertiflora*, a fine conical plant, a yard high, and of good bloom, and fine foliage; and *F. eximea*, in good bloom also, but with burnt leaves, so this *eximea* must be a ticklish thing. A splendid specimen plant of *Posoqueria longiflora*, and a collection of *Epacris*, consisting of *Devonia*, a large crimson; *Comosa superba*, *Coccinea floribunda*, *Gem*, *Vivid*, a fine crimson, and *Hyacinthiflora*, all fine, large, very well-grown plants.

The Messrs. Lee, of Hammersmith, sent *Eriostemon buxifolium* in fine bloom; *Styphelia tubiflora*, as bushy as a Heath, and as freely in bloom; yet this is a very bad plant to manage well. This was the best managed sample of it I have seen. *Epacris hyacinthiflora alba*; a new Camellia, called *Brillante*, a white variety; and the new bulb-like plant, *Imatophyllum miniatum*, of Hooker, looking as strong as the strongest Agapanthus, and very much like it in growth, with more than a dozen flowers, of which six were full open and five half-way, others coming up in succession. This is the most valuable plant for the flower beds of that tribe; it will grow out-of-doors and bloom as freely as Agapanthus,

as sure as my name is Donald, although it is yet too precious for that purpose; it will feed as well as a Brocoli, and pay for it too; but stop experiments till we have it in every garden in the three kingdoms.

Mr. Todman, gardener to Mrs. Buckmaster, of Clapham, the Mrs. Lawrence who is to be, if I mistake not, sent the only collection of *Chinese Azaleas*; but they were well worth a first prize. He had, also, a fine, large specimen-plant *Eriostemon myoporoides*; a collection of well-grown *Cinerarias*, of which one, called *John Bull*, was the best blue; *Crimson King*, the best purplish-crimson; and another, named *The Queen*, was a very pretty light one; and a collection of bulbs, such as *Lachenalia tricolor*, a good old thing; four pots of the *Turnsole Tulip*, a large, yellowish, early sort, well suited for early forcing; four pots of the scented *Jonquils*; two of white *Hyacinths*, and one pinky *Hyacinth*, all of excellent growth and management, and from new hands to this "profession."

HYACINTHS.

There were two regular full collections of forced *Hyacinths* in very the best style; a fourteen plant lot from Mr. Davies, gardener to E. Rosher, Esq., St. John's Wood; and a twelve plant collection from Mr. Cutbush, nurseryman, Highgate. Here was *Baron Rothschild* again, a new, large, scarlet *Hyacinth*, and another new dark blue, called *William the First*. They were both new to me, and the best of their respective colours I have seen.

CYCLAMENS.

There were three or four collections of the pretty *Cyclamens*, the richest in new kinds being that from the Messrs. Henderson and Son, of the Wellington Road Nursery, and of them the best, to my fancy, was *Persicum carneum*; *P. rubrum* next best; but when "well done," they are all good, gay, and very handy for rooms, mantlepieces, and work-tables, where ladies work the fashions of the day, or show them off.

MISCELLANEOUS.

The same firm sent, but not for competition, a little plant, or branch, of *Genesthylis fuchsoides*, which I mentioned as a rare plant from the February meeting. This had three flowers on. A new *Camellia*, called *Giardine Franchette*, a fine, mottled, soft, rosy flower, with lighter edgings, a very distinct *Camellia* in a new strain; and *Jenny Lind*, a white cupped flower, not large, but of "great substance," as a florist would say; together with four or five large specimen plants, and the new *Clivia miniata*, alias *Imatophyllum*.

ACACIAS.

There was a collection of *Acacias* from Messrs. Arthur Henderson and Co., of the Pine-Apple Place Nursery. These were not large, nor in the usual Hendersonian style of growth. There were two varieties of *Acacia Drummondii*, one of which, the true one, is of the finest; the other is not worth pot room: *diffusa*, a dwarf, bushy plant; *argentea*, with soft silvery leaves, like those of the Cape Silver-tree itself; and *longifolia*, with long, narrow sickle leaves.

THE SOCIETY'S PLANTS.

From the garden of the Society we had lots of plants, the rarest of which was a very distinct evergreen *Berberis*, called *Erlangenbergii*, with plumes of nodding, pale sulphur flowers; four or five of these plumes rise on long footstalks, at the top of each shoot, then bend over, and branch into separate flowers; a very distinct kind, with smallish, hard leaves, in the pinnate form. The plant of *Thyracanthus rutilans* aforesaid, and *Epacris Kinghornii*, a blush kind, and three well-bloomed

Camellia Doncklaari; the Society are famed for the proper spelling of names; you never see Mr. Doncklaar's name rightly spelt except here. He sometimes signed Doncklir in letters which I have seen, the dot over the *i* being equivalent to two, as on the continent. Also a collection of *Chinese Primroses*, a fine *Begonia manicata*, and *Sciadocalyx Warscewinzi*, four feet high, and most profusely in bloom, in the way of *Gesnera mollis*, but a far better style of flowering; I am not quite sure this was from the collection of the Society. There was a treat from Lord Dillon for the ladies, a nice basket of cut flowers of the *Neapolitan Violet*, just such as one would expect from a nobleman, and such an one as Sir William Middleton would give me a Sunday coat for some years ago.

There was also a couple of dishes full of the *Climanthus fragrans* and *grandiflora* from the Society, and these were handed round for the ladies to mix in their pot pourri at home. We were told that these blooms had only the protection of a mat from the late frost in the Society's garden; and also that the *Chinese Primroses* within the glass walls stood all the frost unharmed, although the thermometer fell to zero with them.

There was a beautiful new seedling *Azalea* from Mr. Fleming, a large white, with carnation stripes and blotches.

CHINESE PRIMROSES.

The best six *Chinese Primroses* were from Mr. Smith, gardener to Mr. Wray, Little Blake Hall, Hampstead; they were in large twenty-four pots. The second best were from Mr. Chilman, gardener to Mrs. Smith, Ashted House, Epsom. The next prize was either to Mr. Green, gardener to Sir E. Antrobus, or Mr. Henderson, of the Wellington Road Nursery; but the Messrs. Henderson had by far the best kind, which is called *Magnum Bonum*, a rich, velvety crimson, and a large fringed bloom; another one, called *The Bride*, a pale French-white, or lavender, a strain which seems to be scarce round London, but with which we were surfeited about Ipswich long ago. By far the best kind about London is this *Magnum Bonum*, and the plants ought to be placed immediately on a top shelf, close to where they give the "top-air" to the house, that being the best position for getting the plants to seed thus early. If they are put into a cold pit, as they do in some nurseries, I would not give much for their chance of good seed. There is hardly a plant we know which is more difficult to get seeds from than a first-rate *Chinese Primrose*; and yet those who know the exact process never fail in getting plenty of seed. After the middle of April the pots should be put into larger ones to screen the roots more effectually from the sun, and all the watering ought to be from below, by having a saucer under the pot. Instead of pulling off decayed flowers as soon as they droop, split each one into two halves before you remove it, otherwise, in pulling up the tube of the flowers, you will probably destroy the "pin-head" of the pistil, and if you do, you will have no seed from that flower. It is a good plan to dust the "pin-head" with the pollen before and after the flower is removed, as that part, in the *Primrose*, remains fresh long after the flower is gone.

I am again encroaching on space, so that I cannot proceed with fruits, vegetables, and the odds and ends; but I must tell of a new French invention for preserving vegetables, which was explained to us, and which is one of the greatest wonders of the age.

PRESERVED VEGETABLES.

There was a square cake of compressed vegetables exhibited; it might be fifteen or eighteen inches on the side, and not more than two inches thick, and as smooth as a piece of board; it weighed six pounds, and the price

of it is 7s. 6d. It was said to contain as much vegetable as would serve to "sance" a full dinner for 120 men!! There is not the smallest question on the subject, for we had a letter from the Crimea, from Admiral Hamelin, acknowledging the arrival of 40,000 pound weight of this preparation, and the old sailor wrote in the highest terms of its value and use to the French soldiers and sailors, both in a sanitary point of view, and for filling their stomachs with a perfect relish. The process is conducted by a firm in Paris, called Chollet and Co., with Masson's Patent. Carrots, Onions, Leeks, Cabbages, Potatoes, Turnips, and all manner of garden stuff, are first partially dried, then mixed and compressed into these cakes,—a grand discovery. D. BEATON.

ANNUALS FOR GROUPS.

SEVERAL enquiries having been made on this subject, I will attempt to meet them with a few remarks hastily thrown together.

Annuals, notwithstanding their real beauty, are now too often considered as mere weedy things. The short time during which many of them remain in full perfection is one reason why they are less used than formerly. The little care taken of them, allowing them to remain in a mass unthinned and uncared for, is another cause of their decaying popularity. When once sudden changes in a flower-garden become desiderata, and these changes are brought about by no lack of the labour principle, annuals will again become a more important item in ornamental flower-gardening. The present bedding-system is greatly based upon the principle of saving labour. Once get the beds filled and growing, and the chief labour respecting them is finished. The chief question about a plant, therefore, is not so much its intrinsic beauty for a few weeks, but will it stand and produce bloom continuously during the season, say after the end of May? If this fashion is long persevered in, our gardens will become so stereotyped as to be deficient in the pleasures of variety. A garden cropped with well-grown annuals would now be a treat, just because it would be unique and uncommon. Few things are more beautiful, when seen at their best. Just think of beds and rows of different coloured *Candytufts*! What is there among your finest bedding-plants that will beat them? Come a few inches lower down, and what more lovely than the *Nemophila insignis*, and its sister species, *maculata* and *atomaria*? Rise a foot or so higher, and what more pleasing than groups of *Enothera Lindleyana*, and *Rosea alba*, and masses of *Phlox Drummondii*, *Chrysanthemum tricolor*, *Viscaria oculata*, and even the *Erysimum Perovskianum*?

For low-growing, compact beds, I need scarcely mention the *Saponaria calabrica*, the *Sanvitalia procumbens*, and the different kinds of small *Lobelias*, because these are pretty well recognised as fit for bedding or edgings, from lasting the most of the season through. One reason why many places of no great pretensions beat our large flower-gardens hollow in the early months of the year, is just because annuals are liberally used. The Academy Garden, near Wilderness Park, was a perfect blaze of bloom early in the season, because the commoner annuals were freely grown in unison with such old fashioned plants as *Pinks*, and *Sweet Williams*, and *Canterbury Bells*, and *Rockets*, and *Larkspurs*, &c.

Many families have told me that *these* bedding-plants are very well for summer and autumn gardens in the country, but that their town and suburban gardens are far behind what they used to be, in point of masses of flowers. They say that very likely they are very nice some weeks after they have left and gone to the country,

but that previous to the middle and beginning of July they see nothing but costly, big-named plants, contending with the weather, as to which will conquer at last.

Now, in all such circumstances, there are no bedding-plants, among those usually accounted as such, that will make a show fit to be seen in the months of May, June, and the first part of July, compared with the older perennials that bloom early, and the hardier of the annuals. From the end of July to the end of August is, generally, the worst time for annuals, as they soon run to seed at that time; but those sown either in pots, on turf, or on stiffish soil in a border, in April, May, and June, will generally bloom freely and well during the autumn months, either where they have been sown, or when transplanted in clumps to well prepared beds.

There is something in the soil in which annuals, generally, should be grown; it should be deeply dug, and be rather poor than rich. Instead of enriching the soil, I prefer giving top-dressings of leaf-mould and burnt earth, whenever the plants show a weakness of growth, and when it is desirable to assist growing, so as to prevent seeding as much as possible.

There are two modes of keeping up a succession of bloom in an annual bed; first, by preventing the plants seeding. By merely cutting and stripping off the seeds, I have had beds of *Enothera Lindleyana* fine from May to October. The same mode has been adopted with *Escholtzia*, *Erysimum*, various kinds of *Lupines*, &c. Frequently, pieces of the stems would be cut off altogether, and then a top-dressing and a good watering would carry the plants on for a month or two. Other things will hardly admit of this treatment, as the labour would be so excessive, such as in the case of the *Candytufts*, the *Nemophilas*, the *Collinsias*, especially the beautiful *C. bicolor*; but by sowing and planting these rather thinly in rows, early in spring, say by the middle of March, I have seen a good succession kept up by sowing between them in the beginning or towards the end of May, and thinning out the first gradually, to give the young ones room. I once had a fine bed of *Collinsia bicolor* from the end of May to the end of October, by sowing in September, in May, and July, and the bed never looked bad, though twice during the summer, for a few days at each time, it was rather seedy, before the old plants were all pulled up and the younger ones had taken their place.

By keeping a large reserve garden of annuals sown in pots, or on thick pieces of turf, with spaces scooped out for fine soil and seeds, a bed of annuals might at once be cleared away, the ground dug, and a similar, or a different colour of annual or annuals planted. Much could be done in this way, in small gardens, where freshness and frequent changes are desirable, and where labour is an item never complained about.

While the present taste for grouping lasts, then, unless where labour is abundant, annuals will be chiefly valuable; for *early* massing of bloom, and for late display in the borders, for forming broad edgings of low-growing plants that will give effect to the flower-garden before the main plants in the beds have come to perfection, and for planting thinly, so as to make some show before the regular bedding-plants monopolise all the space, when the annuals may be pulled up, having previously performed the double duty of giving ornament and yielding an agreeable shade to the more stationary plants.

In using annuals for beds and these different purposes, I have tried three plans, and if there were conveniences I would prefer the last for obtaining abundance of early flowers. The first is sowing the seeds in small patches, in the middle and towards the end of March, and covering each patch with a flower-pot until the seed is up, and then at night, and in cold weather, for some time

longer, and then carefully thinning out the young plants. The second mode was to sow in poor soil, over a stiffish clayey loam, in September, and protect with a few green boughs in winter. These were lifted with a trowel, in small patches, in March, and planted in ground well dug and pulverised for them. Most of the Californian annuals answer well by this treatment, as also all the varieties of Candytuft, Sweet Alyssum, Virginian Stock, &c. In such a winter as this last, however, unless well protected with snow, there will not be many plants remaining. The third mode is to prepare a slight hotbed with leaves, &c., about the middle of March; on that place a little rotten dung, then a couple of inches of rough soil and rough leaf-mould, and then an inch of fine soil, and on this sow the annuals in rows, to be transplanted out in little patches when from one to two inches high. If these can be covered with a glass sash, so much the better, if not, hurdles or mats will do. For want of a slight hotbed, I have done the same on a warm border, and protected a little with what I could get, until the plant would stand the weather, and then they were lifted in little patches, and planted according to their height and mode of growth, from a few inches to twelve inches apart.

The advantages of this last plan, whether assisted by a slight hotbed or not, are, that the ground is nicely mellowed for the reception of the little tufts of young plants; and the having them altogether, either on a bed or on a border, enables you to protect them all easily at first, and to accelerate their healthy growth by stirring among them, and giving them chilled water, say about 70° to 80°, which helps to warm the earth about them. When lifted about this size in small patches, slightly pressed in the hand, laid on a flat basket, on leaves, or on moss, shaded as they are carried to the ground, planted neatly, and watered, they seldom want more, unless a little shade with spruce boughs, or bits of rag, for a few days. I have shaken a few bits of hay thinly over them with good effect.

But though even the hardiest annuals will not dislike the above treatment, there are many suitable for groups which will not do much good without it, or even more heat than such a slight hotbed; and in the following short list, the letter A will designate which particularly require such treatment, while the letter B will designate those that will be most likely to bloom the whole season without any extra care, it being understood that the others will not do so without successions, or preventing the seeding process from being completed. If it were not for the labour, almost every annual would keep on blooming if the seeding was wholly prevented, and top-dressings and waterings communicated.

ABRONIA umbellata—A B, lilac; trailing.

AGERATUM Mexicanum—A B, lilac-blue; two feet in height. This would be better sown in a hotbed and hardened off.

ALONSOA grandiflora and *incisifolia*—A B, scarlet; one foot in height; treatment as last.

ANAGALLIS, of kinds—A B, blue; chiefly one foot high.

ANTIRRHINUM—A B, sown in spring, will bloom in the summer and autumn.

ASTERS, Chinese, German—A B, in addition to these, sow on the open border, in well-mellowed ground.

ANNONIUM alatum—A B, whitish; two feet.

BARTONIA aurea—A B, orange; one foot; if not sown in the ground should be sown in pots, as it does not transplant well. A rough-looking plant, singular foliage, but the flowers large, and the stamens long and numerous.

BRACHYCOME iberidifolia—A B, whitish-blue; nine inches high; compact habit; neat and pretty.

CAOALIA solifolia—A B, fine yellow; one foot high.

CALANDRINIA umbellata—A B, red-crimson flowers, about six inches in height; plant compact and close to

the ground; sow in pots, as it transplants badly; very neat for a small bed.

CALANDRINIA discolor—A B, rose-colour; one foot.

— *speciosa*—B, purple.

CALCEOLARIA pinnata—A B, yellow; one-and-a-half feet; sow in pots, and cover thinly.

CALCEOLARIA Chelidenoides—A B, sow this also in pots and cover slightly, though it would come freely enough in the border. Both of these will want the seed-pods to be removed, to keep up a continuance of flowering.

CALLIOPSIS, atrosanguinea, Drummondii, grandiflora, and many more, will continue to the end of the season if seeds are cut off, and will be more regular if raised and then planted; all of them are well furnished with fibry roots, and most of them are from two to three feet in height.

CAMPANULA carpatica, Loreya, pentagona, &c.—low-growing plants, with blue and purple flowers. The first is a perennial, but will bloom if treated as for it the first season.

CANDYTUFTS (Iberis)—a well-known class; valuable for early blooming.

CHRYSANTHEMUM tricolor and aureum—A B, from one-foot-and-a-half to two feet; make striking beds.

Chryscis, or *Eschscholtzia*—these are best sown in the ground, though they transplant pretty freely, and few things are more dazzling than a yellow or orange bed.

CENIA turbinata—white, like camomile flowers; a few inches high; A.

CLARKIA pulchella, purple; and *alba*, white; A. These are well known, and for a month or six weeks few things will beat them. They generally stand the winter well; about twelve inches in height.

COLLINSIA bicolor, lilac and white; and *grandiflora*, pink and blue. The first from a foot in height; the latter more trailing, and also more lasting. These do well sown in autumn, and also as A.

CLINTONIA pulchella—A B, pretty, party-coloured, low plant; should be sown in a pot in a closish hotbed, and then hardened off.

CONVOLVULUS minor—A B, varieties; from one to two feet; splendid when sun shines.

DIDISCUS (Trachymene) cærulea—A, blue; one-and-a-half feet.

ERYSIMUM Peroffskianum—A and B, if seeds pruned away; stands the winter when sown in autumn; fine orange; from one-and-a-half to two feet.

EUCHIRIDIUM grandiflorum—A, purple; one foot.

EUTOEA viscida—blue; *Wrangelana*—lilac; *multiflora*—lavender. Interesting plants, though a little coarse; from one to two feet in height. A, and nearly B.

GILIA tricolor, and others—good for early-blooming.

GODETIA lepidota—blue; *venosa*—claret; *rubicunda*—crimson; *Romanzovii*—purple; from one to two feet high; do well sown in autumn, also as A; will be done by the end of July, unless pruned, and seeding prevented.

GYPHOSOPHILLA elegans—A, whitish-purple; nine inches.

HAWKWEEDS—yellow, white, and purple; have had them almost B, with a little picking; about one foot.

HELIOPHILLA araboides—blue; and several more; one foot; will be A B, in a shady place; plant thick.

HIBISCUS Africanus—yellow and brown; one to one-and-a-half feet; A.

ISOTOMA (Lobelia) axillaris—A B, purple-blue; one foot; best sown in a pot, in a hotbed, and hardened off.

KAULFUSSIA amelloides—blue; nine inches; A B.

LARKSPURS of sorts.

LEPTOSIPHUS—these, whether old or like the *luteus*, rather new, are all low-growing, and may be sown in autumn, spring, or as A.

LINUM grandiflorum—A, and supposed B, scarlet; from one to two feet.

LOBELIA erinus, erinus compacta, erinus grandiflora,

gracilis, speciosa, ramosa, heterophylla—all blue; the five first trailers; the two last upright, and from one foot in height; A B, make beautiful beds, edgings, &c.; as the seed is small, should be placed in pots, covered with a dusting of silver-sand, and get a little more heat than A.

LUPINUS, *nanus*, white and blue, and *Hartwegii, mutabilis, Cruickshankii*, &c., will all answer to A B, if seeds are removed. *Nanus* is about one foot, and the others from two to five feet; the annual blues, roses, and yellows, will also bloom long, if the seed is removed as soon as the pod forms.

MALOPE, *trifida, grandiflora*—good for large, tall beds, either treated as A, or sown in the ground.

MARIGOLDS of sorts—A B.

MIGNONETTE.

MIMULUS—A B, good for early summer and autumn.

NEMOPHILA—many varieties A, or in the open air; none of them stand the heat of the end of July well, though few things are more splendid in early summer.

NOLANA—A B, from six inches, bluish, and should be sown in pots, if not sown where to grow at once, as they do not transplant well.

CENOTHERA *Lindleyana*—red and white, and *Rosca alba*, rose and white, two feet. A, or in the open ground.

PENSTEMON—perennial kinds, treated as A, will bloom after midsummer.

PETUNIA—*white and purple*, A B.—These can always be procured, and white and purple beds are thus often better procured from seeds than from cuttings of the best kinds, as they are so apt to go off in some grounds.

PRINCE'S FEATHER—though not continuous, a small bed of this would have no bad effect.

PHLOX DRUMMONDII—A B.—Many varieties of this are easily procurable by seed, and a bed will generally stand the whole season; while a bed procured from cuttings of the best kinds will generally bid you good-bye after the dog-days.

PORTULACCA—A B, would only be worth trying in very dry and warm positions.

RHODANTHE *Manglesii*—the same as the last.

SALPIGLOSSIS—A B. Saw some fine beds of these last season; had rather more heat than A to start them.

SALVIA *patens*—this never does better than when treated as an annual. It would be well to sow the seeds by the beginning of March, and in a hotbed, taking them out into a cooler place as soon as they were up.

SANVITTALIA *procumbens*—A B, orange and black; trailer; has often been recommended.

SAPONARIA *calabrica*—A B, pink; this has often been recommended; was fine last year until the middle of October.

SILENE, *pendula, compacta, schafta*—low plants, with pink and rose flowers.

SULTAN—purple and yellow; A, or open air; nearly B.

SWEET ALYSSUM, open air, or A B, white and sweet; one foot in height; always in flower.

SPHENOZYNE *speciosa*—A, and nearly B, neat, compact, yellow-orange; one foot.

STOCKS of kinds—A.

TAGETES *signata*, A B, yellow; one to two feet; rather new.

VISCARIA *oculata* and *oculata alba*,—rose and white; from one to one-and-a-half feet: A, and nearly B; if the seeds are removed will keep on well to the end of the season.

WITLANIA *grandiflora*—a dwarf annual, introduced by Messrs. Veitch; something like the *Eutocas*, A; but cannot yet speak of the length of time in which it flowers.

TROPEOLUM *canariense*, yellow; *majus minus*; *atro-rubens*, orange and crimson—make showy beds, when the leaves are to a great extent removed to show the flowers.

VIRGINIAN STOCK.—This pretty little annual may be had all the summer by sowing in September, the middle of March, and the end of May.

VERBENA, *venosa*, purple; and *Aubletia*, bluish-purple, —will make good beds in summer and autumn if the seed is sown in a slight hotbed; and so will any of the Verbenas, though you will not be able to depend upon the colour, A B.

XERANTHEMUM *lucidum*.—There are yellow, white, and rose varieties, and from two to three feet in height. Many admire them for the hardness of the flowers, which makes them long-enduring when gathered, A B.

ZINNIA of varieties, A B., but either more heat should be secured, or the seeds should not be sown until the middle of April, under glass. The goodness of beds of these beautiful flowers greatly depends on the plants never receiving a check; and, therefore, the middle of April will generally be early enough for sowing, as it will not be safe to plant out before the beginning of June, or after the first week is past.

All those alluded to as blooming early will make fine pot-plants for greenhouses. Few things will rival *Nemophilas*, *Collinsias*, *Schizanthus*, &c., when thus grown.

This article may enable several readers to pick out what will suit them; and for more definite information other inquiries had better be made.

R. FISH.

FOUNDING AN EXPERIMENTAL FOREST.

IN this country we have a very large extent of land belonging to the nation devoted to the growth of timber. The people, through their representatives in Parliament, have placed the management of their woods and forests in the hands of some gentlemen who, through their office, are called the Commissioners of Woods and Forests. These gentlemen appoint deputy-surveyors, and these, again, appoint foremen and labourers, who plant, thin, prune, bark, and fell the trees under their direction. These are facts well known. My object in mentioning these matters is to point out what a grand opportunity these deputy-surveyors have of proving, by experience, the best situations and soils for the different kinds of timber trees, and the best and cheapest modes of planting, pruning, and thinning the woods under their supervision.

Whether the deputy-surveyors at present employed have the requisite amount of practical experience to do such duty to its full extent, is another question. So much depends upon their acquired knowledge of the business previous to the entering upon such a weighty, responsible office, that it is a matter of grave doubt whether the choice of the Commissioners is always a wise one. It is a true, yet melancholy fact, that men sometimes obtain situations of great responsibility, requiring, to fill them well, and do justice to the office, such a previous training as they have never undergone. We have, in various parts of the empire, experimental farms and experimental gardens; we have periodical papers, magazines, &c., expressly devoted to advance the tide of knowledge in such matters. There are Agricultural Societies, Horticultural Societies, Pomological Societies, and various other societies instituted by wise and good men, to extend and improve these several arts and sciences; and by so doing, to chase away the mists of prejudice and ignorance, and thus render the present and future generations of men wiser and, consequently, happier. This is all very praiseworthy, and a matter of rejoicing to every true patriot and lover of his country. But let me ask, have we made any progress in woodcraft? Have we an Arboricultural Society? Have we an experimental forest? The answer is, No! and yet the abundant supply of timber for ship-building, for domestic purposes, is scarcely inferior in importance to the supply of any other of the necessities of life. We have, in a great

measure, neglected the replacing of the forest timber by planting, and, I fear, have not managed well what is now in existence. It is high time to bestir ourselves, to take time by the forelock, and adopt such means that the culture of timber may be better known, and put in practice throughout the length and breadth of the land.

I am of a decided opinion, after a course of careful reading and study, that Government should take this matter in hand, and set an example to large landholders; and the first step I would recommend would be to form an experimental forest, as a guide to which I most respectfully submit the following resolutions:—

1st. That a considerable extent of land, not less than from one to two hundred acres, of various qualities and heights above the level of the sea, shall be chosen and set apart for, and devoted to, the culture of every kind of hardy timber tree in separate and distinct lots.

2nd. That this plot of ground shall be called "The National Experimental Forest."

3rd. That every kind of timber tree shall be planted in each kind of soil, to prove which thrives best in it, all being thinned and pruned alike. One portion to be set apart to be pruned in the various ways different foresters have recommended, and one portion to be left to be pruned by nature alone.

4th. That this Experimental Forest shall be placed under the uncontrolled management of the best forester of the day, with a staff of well-educated young men as assistants, to whom the head manager shall be required to impart all the elements of forest culture, with a view to train up a number of effective and able foresters for the next generation.

5th. That a regular register of the operations done; the progress of the different experiments; the growth of the trees, expenses incurred; and any-

1st. It may be asked, Where is such a plot of land to be found? I answer, In any of the national woods and forests a plot of sloping ground might be selected. I should say it ought to be near a railway-station, in order that it might be easily visited. Before planting, everything that would interfere with its object ought to be cleared away, the ground well drained, and so fenced as to keep out all kinds of game that would injure the young trees. A good dwelling-house for the head manager, with lodging-rooms, library, &c., for the assistants, ought to be provided.

2nd. The National Experimental Forest should be always open to respectable visitors, especially foresters, nurserymen, and gardeners.

3rd. By thus bringing into juxtaposition the various trees, the fitness or not of any species for such and such soils would be made a matter of certainty, and thus the planting of them on unsuitable soils avoided. The hardihood, also, of foreign timber trees, and their probable value, proved.

4th. This rule is a very important one. As a school for young foresters the institution would be invaluable.

5th. By thus publishing the progress of the place, the nation would be satisfied that the expenses incurred would be money well laid out, even though the

thing else likely to be of use to the forester, and the public in general, be published annually in a cheap form.

6th. That every seventh year this Experimental Forest shall be visited and examined throughout by a committee of competent persons, who shall draw up a report of its state and progress, and submit that report to Parliament.

7th. That at the end of the third seventh year, part of every kind of timber on every lot shall be (after due preparation) felled, sawn up, and notes taken in the presence of the visiting committee and an experienced timber-merchant, with a view to show the effects of the various modes of pruning, the solidity, and usefulness of the wood grown in high and low situations, in close or thin plantings, and an estimate made of the value and profit of each kind of tree per acre.

timber itself on the plot did not (which I am pretty certain it would) repay the expence.

6th. The head forester would be certain to exert himself to the utmost to render this forest a credit to himself and useful to the nation generally, when he knows that he would have these septennial visitations.

7th. This visitation in the twenty-first year would be the consummation of the experiment. If all has prospered, and given satisfaction, a second and larger lot of the forest land might be subjected to the same routine of culture, and the first one left in its prosperous condition, well clothed with young progressing-in-value timber. This second Experimental Forest being on a larger scale, the experience gained in the first one will be found extremely useful as a guide in planting it. And by thus extending, from time to time, the operations of the institution, the whole of the forest lands would be put into a prosperous condition, and there would be a prospect of these islands being, in all their uncultivated parts, clothed with valuable timber. T. APPLEBY.

PORTLANDIA PLATANtha. (BROAD-FLOWERED PORTLANDIA.)

This is a genus of noble stove-shrubs, from Jamaica, named in honour of the Duchess of Portland, a liberal patroness of gardening. There are only three species, namely, *P. coccinea*, *P. grandiflora*, and *P. platantha*. The first has, as its name imports, scarlet flowers; but it has never, that I know of, flowered in this country, though introduced so long back as 1812. The second, I have seen very well grown and finely flowered at Welbeck, the seat of the Duke of Portland. The third, however, is the finest of three species, and is of a more recent introduction; and as it is really a fine plant, I wish to bring it more into the notice and favour of the readers of THE COTTAGE GARDENER that have a stove to grow it in.

It is an upright-growing, woody shrub, with broad ovate leaves, and large, pure white, sweet-scented flowers, somewhat trumpet-shaped, standing upright. The *P. grandiflora* has similar flowers, but both leaves and flowers are much smaller, and the plant requires to be of a tolerable size, aged, and woody, before it blooms, and even then it is rather uncertain; but this species (*P. platantha*) flowers very freely. I have had plants more than a foot high, and only two years old, from the cutting-pot, that produced four or five of their noble flowers. Even cuttings frequently show flower-

buds before they are potted off. A good specimen, with its large laurel-like leaves, and large trumpet-shaped flowers, is one of the most beautiful of stove-plants. If the *P. coccinea* has such large flowers, it must be a still more splendid plant. It is in the country, for Lord Wharfedale, of Wortley Hall, near Sheffield, being in a bad state of health, three years ago, his physicians advised a sojourn in the West India Islands; he visited Jamaica, and his lady accompanied him. Her ladyship is an enthusiastic lover of flowers, and whilst in Jamaica collected seeds of all the beautiful flowers so abundant in that exuberant soil, and amongst them brought home a packet of this *Portlandia coccinea*. I saw, when I was at Wortley Hall, several plants of this fine exotic raised from those seeds, and hope, if I am spared, to see them bloom. It is a remarkable fact, that the human body, in the state of incipient consumption, should, in such hot climates, be able to throw off the disease. Lord Wharfedale returned home quite reinvigorated, or, as the saying is, a new man; and this is by no means a solitary case, even within my knowledge. A very young man, a nephew of Mr. John Andrew Henderson, was in the last stage of what is called a galloping consumption, and was quite given up; but, as a last resource, was advised to try a trip to the West Indies. I saw him a few days before he sailed, and he looked the picture of death; so pale, thin, sickly, and debilitated. He arrived at Trinidad alive, and began to recover, gained strength, and, finally, robust health, and came back quite stout and good-looking, and, for ought I know, continues so to this day.

I trust my readers will excuse this digression; it came into my mind when thinking of the plants of that region, and almost flowed mechanically from my pen. Perhaps it may be of some use in directing consumptive patients to think whether such a journey might have the same good effects upon them.

To return to my favourite plant, *P. platantha*; a tidy, healthy plant may be purchased for five shillings, and the time to buy it is May or June. It would travel safely then. As soon as it arrives at its destination, place it in the stove in the state it is in, I mean in the same pot and soil, for a week or two, to recover the effects of the journey; and whilst that is taking place, be on the look-out for a compost to repot it in.

Soil.—It thrives well in the following: sandy peat two parts, fibry loam one part, leaf-mould one part, and half-a-part of well-decomposed cow-dung. Mix them well together, but do not sift them. If the mixture is not sandy, make it so by adding silver sand liberally. Then place the compost in a dry, warm place for a day or two, and select a nice, clean pot, two sizes larger than the one it is in, drain it well, and then repot the plant. Place it in a warm stove, and give a gentle watering to settle the soil.

Culture.—At that season of the year there will be many young stove plants repotted and preparing for specimens. A close pit, heated with hot-water pipes, and a bed, either tanners' bark or leaves, to plunge the pots in, is the very best place for such plants. Here they can have a high moist atmosphere, which will encourage free growth and fine, healthy foliage, with abundance of healthy roots. The plants will flourish amazingly, and yet, with being close to the glass, the growth will be robust. All that they will require, will be due supplies of water, shading from mid-day sun, plenty of air in the middle of the day, syringing over head just before shutting up, and, if the nights are cold, a covering of mats, or frigi domo, to protect them from the cold. When the plants have made a fair growth, then stop them by nipping off the tops, to cause them to send out side-branches. These side-shoots, when advanced enough, should be tied out, that is, spread out equally on every side, by means of short, neat sticks, to

which the different shoots should be tied with small matting. The plants growing so rapidly will require a second potting in July, and then to be replaced in the pit. Towards the end of September, remove them out of the pit, and put them in the stove. They should then have less water and heat, to give them a gentle rest through the winter. In the spring, if all has gone on well, flower-buds will be visible on the branches. To encourage those to unfold themselves, a small increase of peat, and some weak, warmed manure-water should be given. After the bloom is over, the repotting, placing in the pit, stopping, &c., should be repeated, and the plants will then be attaining a good size, and will be respectable specimens.

Propagation.—This is effected by cuttings. Prepare a cutting-pot in the usual way, that is, well drained, with soil on the top, and an inch of pure sand upon that, fit a bell-glass on the pot, give a gentle watering to settle the sand, and then make the cuttings. The young tops, such as are taken off to cause the plant to branch, are the best; four leaves form the right length. Dress off the lowest pair, and finish by a clean cut just under the second joint. When the cuttings are all made, insert them in the sand, so turning the leaves inwards as not to touch the glass. Give a second watering sufficiently strong to cause the sand to fill up the holes made by the stick in putting in the cuttings. Then plunge the pot, with the glass upon it, in bottom-heat, and shade from sunshine. In a month or six weeks they will have made roots, and as soon as that takes place pot them off directly, placing the plants under a hand-light in heat, shading again till fresh roots are emitted, then give a small portion of air and less shade, gradually increasing it till the young plants are able to bear the full light. They are then established plants, and may be treated accordingly.

T. APPLEBY.

GARDENING FOR THE MANY.

WE have been labouring under the impression, from the very first appearance of our pages until the present hour, that we supplied what is needed by every class of delighters in gardening. We have been startled, therefore, by receiving a letter from a friendly correspondent, which we shall presently add, telling us that we do not act in accordance with our title, and that we do not give a preference to Cottage Gardening. Now, we deny this charge, and appeal to every one of our published volumes for a refutation. It is quite true, we write about "Rosaries," and growing "Roses for Exhibition," yet every paragraph in these papers is available to him who has only six Roses in his borders, and three in his window; and so of a majority of our other Essays. We deny, also, that we have given up our second title of "The Country Gentleman's Companion." It is in the title-page to our last volume, and will appear similarly in that of the present. It only is omitted from our weekly first page, because there every line is valuable for advertisements. But let us proceed to publish our correspondent's letter. It is as follows:—

"Living in a *cottage*, and being fond of *gardening*, I began, some time ago, to take in THE COTTAGE GARDENER, and purchased some volumes of back numbers. I find, however, that it takes a much higher flight than its name indicates (for though I see, in several columns, it claims also to be a 'Country Gentleman's Companion,' that name is at present—*vide* title-page—abandoned). Now, I do not complain of your having articles for country gentlemen, directions for greenhouses, or even hothouses, and disquisitions upon articles quite out of the cottager's reach; but I do think that we, who have

been induced to become subscribers to the work in consequence of its professed accommodation to our wants and means, ought to be somewhat considered, and that specifically I wish well to the work, and think it has the means of effecting a great deal in the gardening world, but I should like to see it try to elevate the everyday gardeners, and not dismay and discourage them, by treating only of matters quite too high for their extent of ground and accommodation. And I do not think that if you, Sir, were to comply with my suggestions, you would be descending, necessarily, to very insignificant details. At the risk of being tedious, but believing that it is the case of many others, besides myself, I will state my own case and condition. It is one in which you will, perhaps, allow that as a certain effect is already produced, I am in a condition to profit by your wider experience.

"My premises are only sixty yards long, by eighteen yards wide. The house stands twelve yards from the road, and occupies a space of twelve yards square. The space in front is flower-garden, the space behind is devoted to culinary purposes. I have no greenhouse, but plenty of manure. Now, here is a description of premises, of which there are hundreds or thousands in our land a little larger or smaller.

"Now, from March to November, half of each included, I manage to have my flower-garden continually gay; and to start from the 15th of March last, I have had a continual supply of vegetables (not reckoning Potatoes, excepting in July, &c.,) up to the present time for my table, of the common kinds. (I must mention that I was more than two months absent from home, viz., May, and part of June and September.)

"Now, what I, and I believe very many others want, is information on the *best* mode of managing a garden of this kind. Take a standard, say my size, or twice the size, or any one you choose, and give us, from time to time, hints and directions for choice of seeds, and plants, and for operations *within our reach*, not requiring the constant use of cold-frame and hotbed, but open air, warm corners, a small frame, perhaps, with its hotbed made once of fresh manure. This will do the high-fliers no more injustice than articles upon Orchids, &c., or Cochon-China fowls do me, who have an old English prejudice in favour of more familiar breeds; and will, I am sure, be highly appreciated by many, who, like myself, take pleasure in our little bit of garden, and have a pride in making the most of it, in its several capacities of fruit, flower, and kitchen.

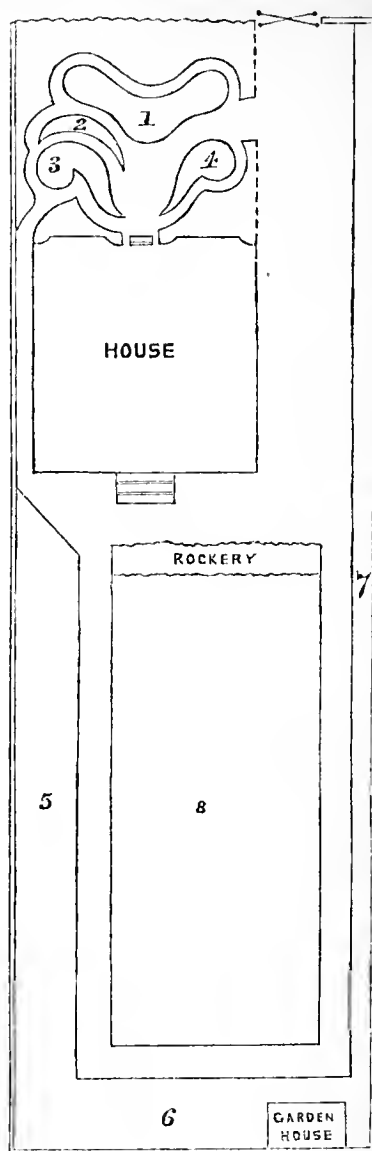
"You can tell us of the most prolific varieties of Peas, Cauliflowers, and other Cabbageworts, Lettuces, and Celeries. You can give us timely hints for the provision of handsome perennials, and what new annuals are worth having; and can teach us what we can do with our hand-glasses and common frames, so as to accomplish *as much as possible* with small means. Mind, I do not expect to raise Pine-apples in my little hotbed, nor Melons under my hand-glass. I never try to do what I am not sure I have means for, but I wish to know *how much I may safely attempt*.

"I would apologise for trespassing on you at such length, but I feel sure my case is that of thousands in the neighbourhood of our towns, and you might think them not worth noticing, if they were not brought under your notice.—Quis."

Now, although we do not plead guilty to the charge of deficiency brought against us, yet will we act as if we felt the charge is just, and will take the following plan furnished by "Quis," and in papers once or twice a month will go through the routine of its cultivation.

In the present instance, we will suppose a small garden behind a village, or suburban house, and to be of the parallelogram form, as in the accompanying drawing, or bounded on its sides by walls or buildings.

If the latter bound it, let there be spouts to carry off the rain-water. We will then suppose, that at the dis-



tance of eight feet or more from the boundary wall, a walk is formed of such a width as corresponds with the size of the enclosure. At the same time, such walk ought not to be less than three-feet-and-a-half wide, and as much more as can be allowed, where other things are concerned. Now, this outside border or borders, Nos. 5, 6, and 7, may be devoted to various small crops, as seedling plants of the *Cabbage*, *Brocoli*, and other things, which, after being nursed there a while, will be planted into the other space allotted them in the enclosure. Now, as we have three of these wall-borders, it is right to expect that one of them will face the south. Let this be No. 5, and may be called "the south border," the uses of which will be treated of hereafter; and of the other two, the north one, No. 7, is not without its uses in retarding certain crops in a hot summer, while the east one, No. 6, is useful at all times. And let it be remembered, that although we have supposed these borders to be only eight feet wide, they may be double that width, provided the size of the interior plot allows their being so consistently with other things.

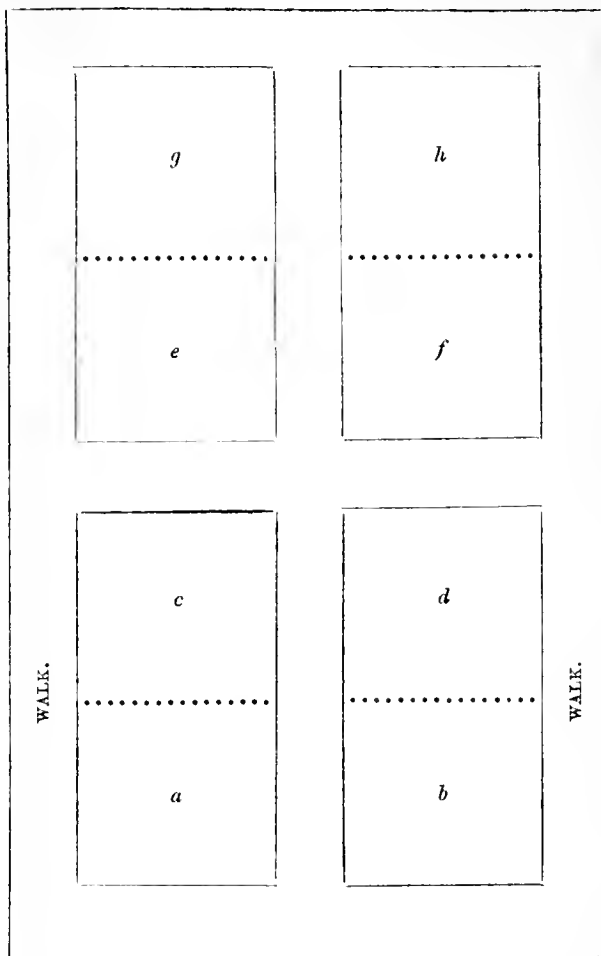
Now, the surrounding walls must be covered with fruit-trees, that behind No. 5 with Peach and Nectarines, and a Grape Vine, of the *White Muscadine*, or *Black Cluster* variety. The Peaches may be *Royal George*, *Newington*, and *Late Admirable*; and the Nec-

tarines, of the *Etruge*, and *Red Roman* varieties, and, if necessary, other kinds might be added, but we will suppose this wall entirely covered with these trees; then the east wall, at No. 6, will contain a few Apricots, Plums, and Pears. Of the varieties of the first-named, it is not an easy matter to say which kind might suit, for I have seen the *Moormap* flourish and bear fruit well at one place, while the *Brussels* and *Orange* refused to do so, while these latter are seen doing well sometimes when the *Moormap* does nothing but canker off. Leaving, therefore, that matter to the discretion of the planter, I might add, that the variety of Pears are of less importance than many would suppose, because, the amateur being expected to take great interest in his garden, will be instructed to graft a great number of kinds on his trees, Pears being better adapted for that mode of culture than any other fruit, still, certain kinds are not suited for the purpose of being grafted on, because they seldom become a healthy tree; for instance, the *Jargonelle*, *Crassanne*, and *Gansell's Bergamot*, all old varieties, ought not to be selected as permanent trees, while grafts of each may be put on as the pleasure of the party may direct. *Marie Louise*, *Winter Nelis*, *Glout Morceau*, and *Beurré Diel*, might be selected as standards, on which the various kinds might be grafted with advantage as well as interest to the cultivator. Of Plums, one of the most useful is the *Orleans*. A *Magnum Bonum* Plum is also useful as a preserving fruit; while most people would be enquiring after a *Greengage*; but there are so few places near towns where this fruit seems to thrive, that we cannot recommend it; but where the stations for wall-trees are but few, a *Cherry* will often be found a much more useful tree than a Plum, the best being the *May Duke* for dessert purposes, while the *Morcella* is not only useful as an occupant of a north wall, but it is also necessary as an adjunct to all gardens.

Having given the above rough outline of the wall-border, and its permanent occupants in the fruit-tree way, we will now look into the centre of the plot, No. 8, and there see what is to be done. The wants of the amateur being manifold, requires every inch of surface to be made use of, and to accomplish this, we will suppose that either a series of espalier-trained trees be carried round the margin of the walks, at the distance of eighteen inches or two feet from the edging; or preferably, pyramidal, or other trained trees, might be introduced, at distances of twenty feet apart, between which there will be room for three Gooseberry or Currant trees, making the whole five feet apart. Now, all these must be planted at least three feet from the walk edging. The trees proper to plant are *Apple* and *Pear*. Stone fruit hardly allows pruning so well, so as to assume the required form, but they will do for espalier trees; but, as it would be wrong to intimate that much good will be derived from any of these in many situations, it would not be prudent to attempt too many, as bush fruit, Gooseberry and Currant, are more serviceable. One thing, however must prevail in some degree—the wants of the cultivator, and the facility, or otherwise, of obtaining such things elsewhere.

Supposing the marginal trees are all planted as wished for; let us now look into the interior, and see what can be done there, as regards the thousand-and-one articles which are either daily wanted, or occasionally so; and in the first place, I will suppose the centre, No. 8, divided into eight plots, as in this plan; and to each of these plots a certain duty is allotted for the current year, to be varied in the next, as will be shown. One of the first of these, it is fair to suppose to be planted with *Strawberries*, which, together with a row or two of *Raspberries* between this and the adjoining crop, we will suppose to occupy about one-eighth of the whole interior space, which we shall denote on the plan by the letter *a*. This may be regarded as a permanent crop, and, except the

dressing and tying up of the Raspberries, as directed by Mr. Errington, we will suppose that there is nothing



particular required here at the present time; and will, therefore, go on to the next piece marked *b*: We will suppose this to consist partly of ground in vacant state, and some where the main supply of last year's *Cabbages* stood, which, after being cut, sprouted again, and were allowed to remain, to furnish young greens during the autumn and early winter, but which are now, by the severity of the weather, rendered useless. These may be at once removed, and the ground being well manured, *Potatoes* may be put in to an extent capable of supplying the wants of the cultivator for at least two months in the summer; after which it is supposed he will be able to obtain them from other sources; those in fields and other places being then ripe, can more easily be had in good condition in the market, but as the whole of this plot may not all be wanted for *Potatoes*, it would be better to plant some part of it with the *Early Cauliflower*. This, however, ought not to be the portion from which the old Cabbage stalks have been lately removed, but the vacant portion which we suppose has been lying exposed to the action of the weather for some time. The *Early Cauliflower* being all about off by July. *Celery* may then be planted, and, likewise, the portion under crop of *Potatoes* may similarly be cropped for the ensuing winter, thereby occupying the whole of this plot, *b*, for the next twelve months; for although much of the *Celery* will be used ere that time, it seldom happens to be vacant so early in autumn as to be of any service. Taking, therefore, for granted, that the early summer Cauliflowers and *Potatoes*, followed by *Celery*, give full employment to this plot for the whole season, with such auxiliary crops as may be enumerated in the shape of *Lettuces* on the *Celery* ridges, which may with perfect propriety be grown here, the

welfare of the more important crop not being interfered with.

Another division, *c*, may be also regarded as one partaking of a permanent character, it being for *Asparagus*, *Sea-kale*, *Globe Artichokes*, and *Rhubarb*; these being all permanent, herbaceous plants, may either be altogether, or the two latter might form distinct rows, dividing the cropping of other kinds; but taking the whole together, the space they ought to occupy, conjointly, might be about one-eighth of the whole, of which the *Asparagus* ought to have at least one-half. But as the cultivation of these things, on a small scale, is exactly the same as when done more extensively, the directions of former numbers of *THE COTTAGE GARDENER* will do for them.

We now come to the plot, *d*, on which the *Celery* of the past season has been growing, and, probably, a little of it is still to be found there, while the vacant portion has been dug up, and received the full benefit of the winter's frost, which, as everybody knows, has been severe enough. Now, however, the season has arrived for cropping such ground, it must therefore be broken up very fine, and the crop of *Onions* sown, as soon in March as the ground will admit the operation to be done, which may, perhaps, be the middle of the month in late places; however, the process is the same. The kind of *Onion* to sow might be the *Globe*, *Reading*, and *Deptford*, and amongst these *Radishes* may be sown; the *Onions* themselves may be sown in rows a foot apart on all light, dry soils, but on wet, clayey ones, in damp neighbourhoods, beds four feet wide, with eighteen-inch alleys will be better, as the latter soil will get so soddened with the weeding, gathering the crop, and other work necessary thereon, as to be unfit for a healthy crop long before the *Onions* can do without it.

Not having space to enter into the cropping of the other division, further than to say, that all vacant ground ought to be turned up as soon as possible, we will again return to the border, No. 5, and on a nice, warm corner sow a little *Lettuce*, *Cauliflower*, *Brussels Sprouts*, and *Savoy* seeds; and a row or two of *Walnut-leaved Kidney Potatoes* may be planted for early ones, towards the end of the month, if the weather is not mild enough before. A few *Cauliflower* plants may be planted out then, and any *Lettuce* plants that can be had then may be planted likewise; but we suspect these will be rather scarce this season. Observe, we only advise a very few of the *Cauliflowers* being planted for the first supply, supposing that there are none of them in hand-lights, but when there are any grown so, and allowed to perfect their growth where they have spent the winter, they will come in earlier than any transplanted elsewhere.

More directions will speedily follow on this head; at the same time, the amateur will see that most of the matters treated of in *THE COTTAGE GARDENER* are equally applicable to a small scale as to a large one.

J. ROBSON.

AMERICAN SKETCHES.

[WE have great pleasure in bringing before our readers the following from the pen of the authoress of "Uncle Tom's Cabin," and hope to derive many more from the same periodical.]

ANDOVER PICTURES.

OUR WOOD-LOT IN WINTER.

Our wood-lot! yes, we have arrived at the dignity of owning a wood-lot, and for us simple folk there is something invigorating in the thought. To own even a small spot of our dear old mother earth hath in it a relish of something stimulating to human nature. To own a meadow, with all

its thousand-fold fringes of grasses, its broidery of monthly flowers, and its outsiders of birds, and bees, and gold-winged insects, this is something that goes to one's heart! To own a clever patch or a buckwheat field is like possessing a self-moving manufactory for perfumes and sweetness; but a wood-lot!—rustling with dignified old trees—it makes a man rise in his own esteem; he might take off his hat to himself at the moment of acquisition!

We do not marvel that the land-acquiring passion becomes a mania among our farmers, and particularly we do not wonder at the passion for wood-land. That wide, deep chasm of conscious self-poverty and emptiness which lies at the bottom of every human heart, making men crave property as something to add to one's own specific levity, is sooner filled by land than anything else.

Your hoary New-England farmer walks over his acres with a grim satisfaction. He sets his foot down with a hard stamp; *here* is reality! no moonshine bank stock! no swindling railroads! *Here* is his bank, and there is no defaulter here! All is true, solid, and satisfactory; he seems anchored to this life by it. So Pope, with fine tact, makes the old miser, making his will on his death-bed, after parting with everything, die, clinging to the possession of his *land*. He disposes with many a groan of this and that house, and this and that stock and security, but at last the *manor* is proposed to him.

"The manor! hold! he cried,
Not that; I can not part with that!—and died!"

In such terms we discoursed yesterday,—Herr Professor and myself, while jogging along in an old-fashioned chaise, to inspect a few acres of wood-lot, the acquisition of which had let us, with great freshness, into these reflections.

Does any fair lady shiver at the idea of a drive to the woods on the first of February; let me assure her that in the coldest season Nature never wants her ornaments full worth looking at.

See here, for instance! let us stop the old chaise, and get out a minute to look at this brook;—one of last summer's pets;—what is he doing this winter? Let us at least say "how do you do" to him. Ah, here he is! and he and Jack Frost together have been turning the little gap in the old stone wall through which he leaped down into the road, into a little grotto of Antiparos. Some old rough rails and boards that dropped over it, are sheathed in plates of transparent silver. The trunks of the black alders are mailed with crystal; and the red witch-hazel and yellow ozers fringing its sedgy borders, are likewise shining through their glossy covering. Around every stem that rises from the water is a glittering ring of ice. The tags of the alder, and the red berries of last summer's wild roses glitter now like a lady's pendant. As for the brook, he is wide awake and joyful, and where the roof of sheet-ice breaks away, you can see his yellow-brown waters rattling and gurgling among the stones as briskly as they did last July. Down he springs! over the glassy-coated stone wall, throwing new sparkles into the fairy grotto around him, and widening daily from melting snows and such other god-sends, he goes whizzing off under yonder mossy stone bridge, and we lose sight of him. It might be fancy, but it seemed that our watery friend tipped us a cheery wink as he passed, saying, "Fine weather, sir and madam; nice times these, and in April you'll find us all right; the flowers are making up their finery for the next season; there's to be a splendid display in a month or two."

Then the cloud-lights of a wintry sky have a clear purity and brilliancy that no other months can rival. The rose tints, and the shading of rose tint into gold, the flossy, filmy accumulation of illuminated vapour that drifts across the sky in a January afternoon, are beauties far exceeding those of summer.

Neither are trees, as seen in winter, destitute of their own peculiar beauty. It is a gorgeous study in summer to watch the play of their abundant leafage, we still may thank winter for laying bare before us the grand and beautiful anatomy of the tree, with all its interlacing network of boughs, knotted on each twig with the buds of next year's promise. The fleecy and rosy clouds look all the more beautiful through the dark lace veil of yonder magnificent elms! and the down-drooping drapery of yonder

willow hath still a grace of its own as it swoops the bare snows. And these comical old apple-trees! why, in summer they look like so many plump, green cushions, one as much like another as possible! but under the revealing light of winter every characteristic twist and jerk stands disclosed.

One might moralise on this; how affliction, which strips us of all ornaments and accessions, and brings us down to the permanent and solid wood of our nature, develops such wide differences in people, who before seemed not much distinct.

But here! our pony's feet are now clinking on the icy path under the shadow of the white pines of "our wood-lot." The path runs into a deep hollow, and on either side rise slopes dark and sheltered with the fragrant white pine. White pines are favourites with us for many good reasons. We love their balsamic breath, the long, slender needles of their leaves, and above all, the constant sybilline whisperings that never cease among their branches. In summer the ground beneath them is paven with a soft and cleanly matting of their last year's leaves, and then their talking seems to be of coolness ever dwelling far up in their fringy, waving hollows. And now, in winter time, we find the same smooth floor, for the heavy curtains above shut out the snow, and the same voices whisper of shelter and quiet. "You are welcome," they say, "the north is gone to sleep; we are rocking him in our cradles! sit down and be quiet from the cold." At the feet of these slumberous old pines we find many of our last summer's friends looking as good as new. The small, round-leaved partridge-berry weaves its viny mat, and lays out its scarlet fruit; and here are blackberry vines with leaves still green, though with a bluish tint, not unlike what invades mortal noses in such weather. Here, too, are the bright, varnished leaves of the Indian pine, and the feathery green of which our Christmas garlands are made; and here undaunted, though frozen to the very heart this cold day, is many another leafy thing which we met last summer rejoicing each in its own peculiar flower. What names they have received from scientific god-fathers at the botanic fount, we know not; we have always known them by fairy nick-names of our own—the pet names of endearment which lie between nature's children and us in her domestic circle.

There is something peculiarly sweet to us about a certain mystical dreaminess and obscurity in these wild-wood tribes, which we never wish to have brought out into the daylight of absolute knowledge. Every one of them was a self-discovered treasure of our childhood, as much our own as if God had made it on purpose and presented it, and it was ever a part of the joy to think we had found something that no one else knew, and so musing on them we gave them names in our heart.

We search about amid the sere, yellow skeletons of last summer's ferns, if haply winter have forgotten one green leaf for our home-vase—in vain we rake, freezing our fingers through our fur gloves—there is not one. An icicle has pierced every heart, and there is no fern leaves except those miniature ones which each plant is holding in its heart, to be sent up in next summer's hour of joy. But here are mosses—tufts of all sorts. The white, crisp and crumbling, fair as winter frost-work, and here the feathery green of which French milliners make moss-rose beads, and here the cup-moss—these we gather with some care, frozen as they are to the wintry earth.

But now Herr Professor shouts, "Look, look! here is the wild-cat." Know then, friends all, that our Audover this winter actually is honoured by the presence of a veritable beast of this species, and driven down from northern latitudes by the cold, she has done our poor wood-lot the honour to make it her rendezvous. There she goes to be sure!—trotting off—a fine, large creature, about twice the size of our fireside-hero, "Scip," whom we consider an extraordinary specimen in his way. She has a fine, open countenance, decidedly pussyish, her body striped like a tiger, with white breast, face, and feet, and a beautiful long tail, much flatter than that of a domestic cat.

Really my heart warms to the creature, as she gracefully puts off through the snow, and I begin to wish that I could subdue her taste for live game and raw meat, and reconcile her to our hearth-rug and domestic circle. As it is, I suppose the woodsmen will consider her a fair mark for their

guns, which as yet she has avoided by that lady-like, coquettish slide and lithe spring of hers. Long may you do so, Pussy! my queen of the forest; you are far too pretty to be shot for that skin of yours, that's a fact!

Now stumbling up this ridge, we come to a little patch of hemlocks, spreading out their green wings and making in the ravine a deep shelter, where many a green springing thing is standing, and where we gain much for our home vases. These pines are motherly creatures; one can think how it must rejoice the heart of a partridge or a rabbit to come from the dry, whistling sweep of a deciduous forest under the home-like shadow of their branches. "As for the stork, the fir trees are her house," says the Hebrew poet, and our fir trees this winter give shelter to much small game. Often on the light-fallen snow I meet their little foot-prints. They have a naive, helpless, innocent appearance, these little tracks, that softens my heart like a child's foot-print. Not one of them is forgotten of our Father, and therefore I remember them kindly.

And now with cold toes and fingers, and arms full of leafy treasures, we plod our way back to the old chaise. A pleasant song is in my ears from this old wood-lot—it speaks of green and cheerful patience in life's hard weather. Not a scowling, sullen endurance, not a despairing, hand-dropping resignation, but a heart cheerfulness that holds out to every leaf, and being, and flower, and bravely smiles and keeps green when frozen to the very heart, knowing that the winter is but for a season, and that the sunshine and bird-singsings shall return, and the last year's dry flower-stalk give place to the risen, glorified flower.—H. B. S.

NOTES FROM PARIS.—No. 8.

PUNICA GRANATUM.

As I mentioned in a former communication that the Pomegranates were very plentiful here, I will take the present opportunity of adding a few particulars respecting the cultivation of the tree (*Punica granatum*) round Paris and the more southern departments of France; for in point of ornament it surpasses some of the most popular half-hardy shrubs grown at the present day in the gardens of England, where it is but rarely seen. It has the elegant habit of the common myrtle, and is of the same natural order; but the foliage is finer, and of a more lively green, while its rich, scarlet blossoms, chaste in outline and singular in construction, render it strikingly beautiful either as a single specimen, or the centre-piece of a group. The Pomegranate tree is rarely fruited near Paris unless grown against a south wall, and even then the fruit does not reach anything like maturity, though it forms a curiosity, and adds to the beauty of the tree, which, for this purpose, is grown as an espalier, and on a border of rich, light soil. As the fruit is invariably produced at the extremities of the branches, pruning is but seldom resorted to, unless to keep the tree within bounds.

But though only grown for ornament near Paris, *Punica granatum* produces tolerable fruit in the south of France, either as an espalier or a standard; but the berries are said to be less highly-flavoured than with the Pomegranates imported from Spain. In the southern departments, indeed, it is so common, that it is sometimes used for the purpose of ornamental hedges near dwelling-houses, as it is easily propagated and grows freely.

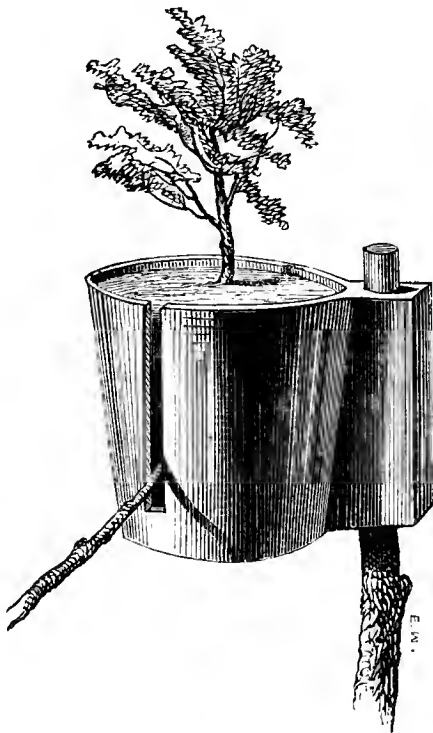
It may be shortly described as a large shrub, with oblong, entire, opposite and alternate leaves, about an inch-and-a-half-long. The flowers grow in clusters of three or four at the summits of the branches, and are remarkable for deep, rich, scarlet or vermilion colour, and their bright yellow stamens; the latter, however, are not present in the double-flowered varieties. Its usual period of flowering is from June to September, and the blossoms last three or four days. When grown in France, the fruit measures about four inches in diameter; but imported from Spain its diameter is often six inches. The outer skin is thick, leathery, deep yellow, tinged and dotted with red. The interior of the fruit is composed of unequal cells, which contain a number of berries like red currants, in size and

colour, only instead of being round they are compressed, angular, and transparent. An excellent syrup is made of the berries, and frequently prescribed in obstinate fevers. The roots, too, as well as the flowers and bark of the fruit, are used for several purposes in medicine.

But as the Pomegranate requires a warm temperature to ripen its fruit, it is only grown near Paris for ornament, and commonly in tubs and boxes, so as to admit of being removed into shelter during the winter months. Some fine examples of it may be seen at the garden of the Luxembourg, and also at the Versailles; but a great number of young plants are grown for the supply of the Paris markets.

PROPAGATING POT.

I enclose a sketch of a pot which is much in use here in gardens and nurseries, for propagating certain kinds of



trees and plants, particularly such as are more commonly increased by the inarching or layering process than by cuttings, as Magnolias, Acacias, and others. It differs from the pot which is usually employed for the same purpose in having a cut down the side, from the rim almost quite to the bottom. This cut, or opening, is about half-an-inch wide, sufficient to admit readily, without much bending or pressure, the branch or twig which it is desired to root in the pot, which has this advantage, that much shorter and younger branches can be propagated with it than with that in common use for growing plants. It may be observed, that the bend in the twig facilitates the production of roots by arresting the flow of the sap; but, however sound or plausible this argument may be in some cases, it does not appear that the neglect of it is followed by any inconvenience in practice, so long as the usual cut is made.

This pot is used with much advantage in propagating on walls, to which it is fastened by means of a nail and string. The twig, after being properly prepared, is then introduced, and the pot filled with soil in the ordinary way.

The width of the cut at the side varies with the size of the pot, but the average is between a quarter and half-an-inch; and though it might seem that the soil would be liable to be washed away by the rain, this is found not to be the case, for the decrease from that or any similar cause is scarcely perceptible. Perhaps the chief advantage of this construction of pot is the greater ease with which the operation of laying in the branches may be performed; there is, therefore, a greater amount of work done in a given time than may be accomplished by the common

process. But the operation of layering in pots, either on this or the old model, can only be performed with the help of shelves or scaffolding, for, as the pots are nearly always raised above the ground, owing to the very nature of this mode of propagating, some standing room must be provided for them. Very true, where the work is with wall-trees, the pots may be hung, but it is more frequently in the open ground, and then some sort of scaffolding becomes indispensable. When a dozen or so of pots are to be supported at different points round a tree, and both above and below, the erection of boards is often an affair of some magnitude, incurring labour and expense, which are seldom cheerfully given. I, therefore, add to my sketch of the French pot, what I propose as a substitute for this cumbersome expedient, being simply a little clay stuck on at one side, and formed into a perpendicular tube of any suitable width, so as to admit of the pots being firmly placed on a stick driven into the ground. Of course, this tube is only to be fixed on in the process of making the pot, and it is for nurserymen and others to consider whether it might be worth their while to have a few dozen of such pots made. I do not see any reasonable objection to the introduction of this contrivance. These pots might be supported as firmly on stout sticks as the common pots can be on shelves or boards; and whether for trees or walls, or in the open ground, they would be infinitely more convenient and manageable than the clumsy erections sometimes used by propagators. As to the form of the tube, it might be either cylindrical or rectangular, but it would be desirable to incline it a little towards the top, in order to keep it from slipping, or a nail driven in the stick immediately under it would answer the same purpose.

RUSTIC BASKETS AND VASES.

There is a great variety of rustic baskets, ornamental vases, and flower-stands to be seen here. Some of them are very pretty, and display much skill in design and construction. The baskets and vases are made both to hang and stand; the latter are very often in stained glass, in the form of shells, elegant salvers, or flowers more or less modified; but the commonest material used for these things is Porcelain. Flower vases, either in Porcelain or glass, afford much scope for the fancy of an artist. Besides being beautiful in design, they are almost always more or less finished with gilding, or studded with small groups of figures and landscapes in oil colour. The baskets and stands are generally made of wood in the usual way, but they are remarkable for lightness and firmness. Their decorations consist of branches, and sometimes bouquets composed of small pieces of thin white wood, neatly arranged, and glued, or fastened on with little tacks. Of course, these flowers and branches are, for the most part, quite flat. One or two drawings, however, would give a far better idea of such things than the longest or most accurate description, and these I shall forward at a future time.

Rustic seats of all sizes for gardens, &c., are commonly made here of cast iron, and in several pieces, so as to admit of removal without inconvenience. The natural stumps and branches, as they are usually prepared for such a purpose, are carefully imitated, both in form and colour, even to the very moss and lichens, and when such a seat is seen in an appropriate place the counterfeit might pass unnoticed.

PARIS HORTICULTURAL EXHIBITION.

The Commissioners of the great Exhibition here have just issued a circular relating to horticultural products, which, as it appears, are to be excluded from the magnificent building now in the course of preparation, and which, it is stated, is designed especially for the exhibition of what more properly belongs to *art and industry*. But the government empowers the Imperial Horticultural Society to invite the horticulturists both of France and foreign countries to contribute to a permanent horticultural exhibition, which the Society is encouraged to organise, and which is to last from the 1st of May to the 31st October of the present year. This Exhibition will be held in the immediate vicinity of the "Industrial Palace," in a large garden, where suitable houses and other requisites will be amply provided for every kind of garden produce, as plants,

flowers, fruit, vegetables of home or foreign growth. This Exhibition will also include such agricultural products as are more or less closely related to horticulture. Machines and implements used in horticulture will likewise be admissible.

Prizes are to be forwarded at the end of the Exhibition for such productions as shall be considered of sufficient merit by a jury appointed by the Society for this purpose. Rules and regulations will be issued without delay; but, in the meantime, the Society invites horticulturists, both professional and amateur, who intend to be exhibitors, to forward information on the following points:—

1st. The nature of the produce to be exhibited, and the space required.

2nd. The time at which the produce will be forwarded, and the length of time it will be exhibited.

Such information, or any other that may be considered necessary, is to be sent to M. Leon Le Guay, Rue de Cherche-Midi, 17, Paris.—P. F. KEIR.

CONSUMPTION OF FUEL AT KEW.

NUMBERS of your readers must have been, like myself, somewhat astonished at the very contradictory statements which appeared in the *COTTAGER*, from Sir W. J. Hooker, and the Messrs. Weeks; and it appears, too, so utterly impossible to reconcile both accounts, or even to make an average between them, that I venture to propose a plan, which has strong recommendations in its favour, for if it is adopted by Sir W. Hooker, and proves successful, he will have the advantage of not only economising the public money in these pinching times, but at the same time have conferred a national benefit, by demonstrating, without cost, the utility or inutility of Messrs. Weeks' apparatus.

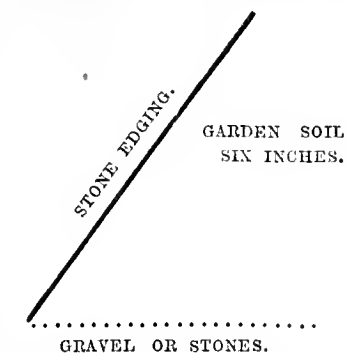
Messrs. Weeks and Co. maintain, that the great Palm-house consumes in heating £1584 per annum. Sir William Hooker estimates the same to be £423, showing the very serious sum £1161 difference. Now, Messrs. Weeks maintain that they can heat the same as efficiently for the sum of 14s. 8d. per day, say £267 per annum. Now, as one of the public, I do think that Sir William Hooker is bound to give Messrs. Weeks a fair trial; and I suggest that Messrs. Weeks shall contract to heat the great Palm-house, to the satisfaction of Sir William Hooker, for the sum of 14s. 8d. per day, for a period of three years. I have no doubt that there could not be any dispute respecting the proper heat, for, doubtless, the temperature for the past year has been booked, and a locked-up, registering thermometer could tell a truthful tale daily for the future. I must confess that I have dabbled in warming apparatuses as an amateur, and feel convinced that a very great saving *can* be made in fuel, and at the same time in the first cost; and with all that, something more generally useful and simple *may* be invented, equally applicable to the humble amateur and the regal stove, and I, therefore, trust Sir W. Hooker will make a move in the right direction, by testing the utility of Messrs. Weeks' apparatus.—W. X. W.

BOG SOIL, ITS DIFFERENCES.—GROWING GENTIANELLA.

I THANK you for giving the proportionate quantities suited for mixture of peat bog and road scrapings from lime stone; and duly note your rebuke, because I enquired whether red or black peat was best adapted for mixing with sand, &c., when I was aware that black peat contained too much peroxide of iron. I wished to draw attention to this, inasmuch as many people send for peat bog, quite indifferent from what depth it may be taken. Many years ago, I was aware of an example where a garden was most carefully, and at some cost, covered with black peat, which poisoned the soil for two years. Another case was named by Dr. Lyon Playfair, during a lecture on Agricultural Chemistry, where the upper portion of a peat bottom of peat soil enriched the pasturo so much, that the owner, the following year, took a

quantity from the same site, but deeper, which destroyed the vegetation, just as if too much salt had been laid on.

I was not certain that all peat bog possessed these different qualities, therefore, I trust, I may be not in fault for having attracted attention to it. For *Gentianella acaulis*, if the ground be prepared in moist, deep soil, by laying gravel or broken stones about six inches deep, then good garden soil, with a stone edging into the gravel, thus—



It will be found to grow in an open plot, not subject to droppings of trees, &c. This is worth trying, rather than abandoning in despair, which is very unlike a "COTTAGE GARDENER."—O. B.

REDUCING THE GENTIANELLA TO OBEDIENCE.

BEING but a poor gardener myself, I never hoped to be able to give even a hint on any operations in that science; but a request from a correspondent "P. B.," in this week's *COTTAGE GARDENER*, for information in growing the *Blue Gentianella*, and your (shall I call it craven?) advice to him to give it up, induces me to take up my pen and give you a word or two on the subject.

An old gardener in this neighbourhood grows it to perfection, and in the season brings large quantities of it to market. My father-in-law purchased the plant several times, but, like yourself and your correspondent, could not succeed in blooming it the second year. He then asked the man how he treated it, and by adopting his method has succeeded very well.

The soil is *solely* the scrapings from a Macadamised road; the plant is planted in a patch of it, if planted singly; or beds or borders made, if wanted, of the scrapings, and before the plant is set. The soil must be made as hard as possible, and then the plant put in with a trowel, and the soil pressed round it as hard as can be done. The gardener said, *roll* it after planting; but it will grow without such cruelty. I may say that our roads are made with broken *gravel* stones. Some roads are made with granite; but I do not think that would make much difference.

In surface-dressing the border, the soil round the *Gentianella* must be stirred as little as possible. I think the man referred to never disturbs his beds at all.—A. M.

EGGS CHEAP AND NEW IN WINTER.

I SEE in your paper of the 20th, that you have done my Poultry notes the honour of inserting them under the title "How to keep Poultry profitably." Forgive me, if I cavil at such a heading to my report, which is intended to hint to the man of a backyard and garden, that a certain variety of fowls *can* profitably be admitted members of his establishment; but hardly goes far enough to shew him *how* he is to act if he wishes to keep them with a profit.

I send you, herewith, my receipt for having cheap and new eggs in the winter season. It can nowhere appear so properly as in the pages of *THE COTTAGE GARDENER*; whence I drew all the hints which have helped me to that uncommon result with amateur Poultry-keepers, a balance on the right side. Perhaps, all I have to tell is an old story. But a new reading of an old rule may not be uninteresting. Those who have paid more attention than I have, may like to see how far another's experience confirms their own; while a novice may prefer my plain account of what I have actually done to a more comprehensive set of instructions.

I said, in my first paper, that Cochins are best suited to furnish small establishments with winter eggs. But the speculative housekeeper must be told, that different families of Cochins vary very much in their egg-producing powers.

When he is intent on getting his stock, let him make particular enquiries on this head. Colour and form do not concern him. Indeed, I think the bright-coloured birds, lemon, or white, are, if anything, less prolific than their dingier sisters. He who looks mainly to the egg-basket, had better pick up from the amateur who breeds for the shows, half-a-dozen of the undersized or discoloured pullets of the March and April broods. The price of such should not exceed 15s., or a guinea for the set.

Mr. Stevens has sold, in his auction room, this year, dozens of pure-bred pullets at from 5s. to 7s. 6d. a couple. Indeed, I do not know that any one who purposes to give my plan a trial could do better than send to Stevens for his birds. The birds should be got home about the middle of September, when eggs begin to grow dear. A game-cock would be a capital companion, but is not necessary. The fowls should be kept clean and warm, and fed twice a day, thus: In the morning, as much good barley as they will eat; in the evening, a mixture made with hot-water in which meat has been boiled or dishes washed, of barley-meal and pollard, barley-meal and boiled turnips, potatoes or mangel wurtzel, or meal and fresh grains, will be the best of suppers. Meal is too expensive to be given alone, but mixed with cheaper food to give bulk it is most excellent.

I do not think that animal food—although a very little occasionally improves their condition—is necessary, especially if the mixture is given hot, and if all kitchen refuse is added to it. Green food and lime rubbish are necessary, but need not add to the expense. Fed in this way, the six birds, or the seven (provided the cock be not a young Cochin), may very well be fed for 1s. a week. From September 15th to February 1st will be twenty weeks. The fowls will cost for food a sovereign in that time. If they lay in proportion that my three did, as reported in your paper of the 20th, they will produce not less than 350 eggs. They ought to lay a greater number than mine, if all the six are spring pullets; for two of mine were old hens, and one was allowed to sit. The economical feeder should shut up each pullet when she is broody, and if young, she will lay again in fourteen days. But taking 350 as a produce which may fairly be expected, it will amply repay the sovereign expended in food. The pullets themselves should be killed in February and will be worth prime cost. Several bushels of the best of all manures for the garden will be no contemptible profit.—K.

QUERIES AND ANSWERS.

GARDENING.

CHARCOAL FOR POTTING.—SOWING CALCEOLARIA SEED.

"I see Mr. Fish makes use of charcoal for growing his Fuchsias in, with other good soil. Could you inform me whether the charcoal ought to be in pieces, or in powder? I have some *Calceolaria seed*, and forgot to sow it in the autumn. Shall I have to wait till next autumn before I can sow it?—J. H."

[The charcoal should be in little lumps, somewhat proportionate to the size of the pot and the size of the shift. Pieces of the size of peas in a four-inch pot; of a bean in a six or eight-inch pot; and of a walnut in a twelve-inch pot. The powder will be extremely useful for mixing with sand for propagating purposes. We use it freely; at least, when we can get it for that purpose.]

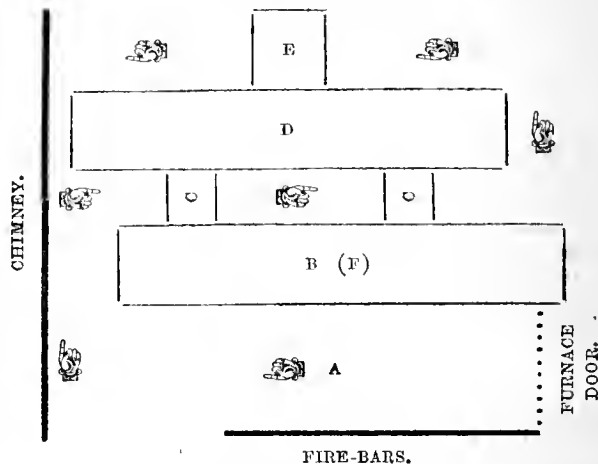
Sow part of your *Calceolaria seed* now, and you will have to keep your plants in a cool, shady place during summer, or plant them out. The large, herbaceous kinds do not like our summer in pots; the roots get too hot. When the seed is sown in the autumn, we get the flowering over before our warmest days. All this has been fully explained.]

CAMELLIAS POT-BOUND.

"I have some large Camellias, but they are pot-bound, which they appear to have been for many years; they are in full bloom now. I wish to ask, whether I ought to shift them into large pots as soon as they have done flowering, or wait until they have made their new wood?—M. H. F."

[Wait until they have done blooming, and when they begin to grow, shift them carefully, picking out the earth from the roots carefully, and place them in pots a size larger. Then keep them close and warm until they begin to set their buds; then give air and light, and harden them off; housing them again in good time.]

BOILER FOR HEATING PURPOSES.



- A. Fire-place. Twelve inches from the bars to the boiler bottom.
 B. Boiler two feet long, and four inches deep. Eighteen inches wide.
 C. C. Two four-inch pipes connecting B with D.
 D. Boiler two feet long, and four inches deep. Eighteen inches wide.
 E. Flow-pipe four inches diameter.
 F. Return four-inch pipe.

"I send you a side section of a boiler that is coming into general use in the North. Many saddle-boilers have been taken out, and this sort put in. They are very easy to manage, and take very little fuel.

"With regard to heat, I have a small forcing place ten feet wide, twenty-seven feet long, five feet high in front, and eleven feet high at the back. It is a lean-to house. I have two rows of four-inch pipes at the back, but they go through to a Vinery forty feet long, and return. I can get my forcing-house to any useful heat. I can get it to 100°, and to 110°, if I wanted it.

"I can make up my fire at six o'clock at night, and I need not go to it again until six o'clock in the morning. The heat will range from 55° to 70°. The boiler is so exposed to the fire that there is no heat from the fire lost. On the top of the boiler there is a T pipe, as I have to heat both ways. There is a carriage-house to heat as well as the forcing-house and Vinery. I have about one hundred yards of pipe to heat.—J. O., Gardener to E. C."

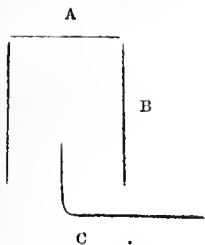
[We see, by your plan, that the lower boiler, four inches deep, is twelve inches from the bars. On this lower boiler, another similar in size is placed four inches above it, and connected together, near each end, by two four-inch pipes. The boiler is two feet long, and four inches deep, and eighteen inches wide. We have no doubt the plan answers well. Thus the fire strikes against the bottom of the boiler from the bars, then passes through the space that separates the top of the first boiler from the bottom of the second, and then turns back again over the top of the second boiler. We certainly wish to know more about this boiler that prevents any heat escaping over the top of the boiler; for we never yet met with a boiler that absorbed all the heat of the fire, and we would travel some distance to see one.]

HEATING WATER BY GAS.

"Having only just seen your number of the 27th ult., I

have only been made aware of my want of perspicuity in the remarks on gas stoves I sent you.

"You presumed rightly, that I did not mean that the wire gauze was to be so coarse as inch mesh, but that above each jet of gas there should be a circular piece of wire gauze, one inch in diameter. That the jet should be, say one inch



- A. A flat surface of gauze covering.
B. The funnel enclosing the gas from
C. the jet.

below this, and that the gas, if more jets than one are used, should be conveyed by a sort of funnel to the gauze, so as to prevent it being blown backwards and forwards. My experience is limited, so I wish merely to hint.

"I had, two years ago, a one-light frame heated by a hot-water boiler and gas. The boiler was nine inches long, by three inches wide, and the gauze occupied one-half of the space below. I found this would not do, owing to the flickering of the light over the surface, thus four-and-a-half inches to three inches, and I painted up all but a square inch. Unfortunately, owing to the gross carelessness of the man I employed to lay the pipe, which had to pass thirty feet or so underground, a large escape of gas was permitted, which swelled my quarter's bill £10!! so in disgust I gave up my experiments, but may again renew them, if I can benefit by the experience of others.—G. A., Glasgow."

LONDON ASPARAGUS.

"I am one of those who generally read with much interest your account of the Horticultural Society's Meetings, and am generally much pleased by the very explicit manner in which you describe things there; still, we country folk are sometimes at a loss about some things. As an example,—in the concluding part of your report of last Meeting, given in the last week's paper, you say Mr. Ingram's *Asparagus* was the best ever seen in London. This, I suppose, means, *at this season*. However, this I will leave, and come the point, which is,—if out of such a good sample you could only beg one head, as a fair sample of the whole, and tell us the length, circumference, or weight, you would give us a very fair criterion to judge fairly by of our own produce. If you could do this at the next Meeting, I for one should feel greatly obliged.—WILLIAM BRADLEY."

[The length, the circumference, or the weight, of *Asparagus* has no more to do with its goodness, or quality, than the length, circumference, or weight, of Mary, queen of Scotland, had to do with her pretty face, or the cause she espoused. The excellence of *Asparagus* depends upon the quantity and quality of its eatable portion. For the London market *Asparagus* is earthed over very deeply, because the citizens ignorantly like to see a long white stem. This white portion is totally worthless. We, and all who covet flavour, as well as quantity of useful produce in our *Asparagus* shoots, never earth the beds producing it, and let the shoots rise five or six inches above the surface, and get well-coloured before we cut them. Nearly the whole is then eatable, and the flavour is heightened tenfold over that cut blanchéd.]

PEARS UPON WHITE THORN STOCKS.

"I have been anxiously reading the different papers as they have appeared in *THE COTTAGE GARDENER* for two years, expecting something would have appeared upon this subject; but natural stocks, Apple stocks, and Quince stocks, all appear to have their respective admirers; and as I recollect, when I was a boy, some thirty years ago, my uncle, in his day, had his small cottage garden, where I imbibed what little taste I at present possess for such matters; and, as far as my recollection serves me, he took a pride in raising Pears upon the White Thorn stock; but as none of your contributors or correspondents seem to notice it, I almost begin to think I may be mistaken. My reason for troubling you is, that twelvemonths ago, in removing some quick Thorn, ten or twelve years old, I picked out four, cut them down to

about a foot from the root, planted them on a south border, allowed them to throw out shoots round the top during last summer, and they are now, I conceive, ready for grafting this spring. If you do not think it would answer to graft Pears upon such stocks, what would you recommend? I am quite a novice in these matters; and I may inform you that my small patch lies very plain to the north and west winds; the thermometer has never exceeded 38° this year, and has several times been as low as, once 13°, and 17° and 18° several times out-of-doors, during the frost. If you think Pears would answer, what are the kinds you would recommend? If not Pears, what other fruit-tree is likely to thrive and bear fruit on them? I offer no apology for troubling you, as I find you take a pleasure in giving advice in such cases.—H."

[We have inserted this communication without a reply, because we shall be very much obliged by any of our readers informing us of their experience in grafting Pears upon White Thorn stocks.]

PREDICTION OF THE FROST.

"I want very much to know in what Mr. Beaton grounded his extraordinary prediction of the late frost.—W. B. BRODIE."

[Mr. Beaton replies,—“I have had several other applications, wanting to know my secret for judging the weather. I am now at the top of the tree as a weather prophet, and I could make a fortune of my secret any day if I choose, but my fortune is made already. I shall sell my secret, however, to the highest bidder, but not under one hundred thousand guineas, to any one, minus the income tax!—D. BEATON.”]

KING OF THE PIPPINS.

"In his report of the meeting of the Horticultural Society, page 392 of *THE COTTAGE GARDENER*, Mr. Beaton, in speaking of the 'King of the Pippins' Apple, relates what I believe to be a fact, 'that Mr. Kirk, the fruit nurseryman, imposed upon the Horticultural Society by this name,' &c. But when he states that 'Forsyth, Lindley, Rogers in England, and Downing in America, have all called it one after the other the Golden Winter Pearmain,' I fear he is wrong; for I have referred to all these authors, and cannot find it mentioned by either of them.

"In Mr. Hogg's *British Pomology*, I find that gentleman has described it under its original name, for which, and similar acts, I remember, two or three years ago, he had to defend himself against what I thought an unwarrantable attack in a contemporary Journal.

"As I am fond of Horticultural pursuits, and particularly those that relate to pomology, and am always anxious to get good information on such subjects, I shall be glad if Mr. Beaton will give me the references in the above works, where I may meet with the 'Golden Winter Pearmain.'—C. G. S., York."

[The above is quite correct, I did put the cart before the horse, and I fear not for the first time. I wrote from memory, and confounded the statements by Mr. Hogg, in his *British Pomology*, with some criticisms made on the *Pomological Magazine* in the *Gardener's Magazine*. Mr. Hogg's *British Pomology* contains the best and most correct account of Apples in the English language; and for the future I shall consult its pages, as I ought to have done about the King of the Pippins.—D. BEATON.]

GROWING LAVENDER FROM CUTTINGS.

"Will you oblige me by telling me the best time to strike Lavender cuttings? (my employer wishes to have them put round a bed, to remain and strike there, to serve for an edging,) and to inform me of the treatment? I wish to have them as dwarf as possible, and want them to flower well, to look pretty from the drawing room window.—H. W."

[This is a good time to put in slips of Lavender; but they will not do much good as you propose, unless the place is shaded and very favourable. You had much better strike the cuttings first, and plant them round the bed next year.]

SAVING CARROTS FROM THE WIRE-WORM.— NITRATE OF SODA AND PHOSPHATE OF LIME.

"Having, last year, almost completely failed in growing Carrots for table use, owing to the wire-worm, I should be obliged if you could inform me of some remedy. I have tried a mixture of salt and guano, administered in solution, without effect. My neighbours are in the same plight; one advises soot and salt; another, a strong solution of lime and water to be given to the Carrots when just above the ground; others, nitrate of soda and salt; others, phosphate of lime. Will you give me an answer in your next COTTAGE GARDENER, with the quantity required?"

"I followed your directions with regard to my Orchard, and 'hand-pulled' nearly all the nettles, but there is still a great quantity of fog or moss. Would you inform me, if I put Superphosphate of lime as a top-dressing, what quantity per acre I should use? Three acres is the size of the Orchard; or whether you would advise nitrate of soda, and in what proportions?—W. HARDING WARNER."

[Ground much infested by the wire-worm should be forked over frequently, and submitted as often to the inspection of a party of Bantams. Rape Cake dug into the soil plentifully, and Rape Cake dust mixed with the seed and sown with it in the drills, is said to be efficacious in defeating the wire-worm.

Of *Nitrate of soda*, one-hundred-weight-and-a-quarter; or of *Superphosphate of lime*, four-hundred-weight, is enough for a top-dressing to an acre.]

FROSTED POTATOES.

"Can any of your readers inform me if it is possible to extract the frost from my store of Potatoes, so as to remove that extreme sweetness which renders them so distasteful to the palate. I considered that a thick covering of fern and straw would have protected them; but they have proved insufficient to stand the six weeks' siege so knowingly foretold by your able aid, 'Frosty Beaton,' as he will be hereafter called.—W. K. W."

[We fear the sweetness is permanent. A chemical change takes place in a frosted Potato, its starch being partially converted into sugar. It is curious that starch is similarly rendered sweet by boiling in water acidulated with a little oil of vitrol.]

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "*To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*"

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WEEKLY CALENDAR.

D M	D W	MARCH 20—26, 1855.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
20	Tu	Lestiva obscura.	30.358—30.278	45—31	N.E.	01	6 a 6	10 a 6	9 26	2	7 45	79
21	W	Sun's declinat., 0° 8' N.	30.404—30.321	49—27	N.E.	—	4	12	10 48	3	7 27	80
22	Th	Tachinus margiuellus.	30.498—30.419	49—42	N.E.	—	1	13	morn.	4	7 8	81
23	F	Tachinus analis.	30.399—30.349	52—23	N.W.	—	v	15	0 8	5	6 50	82
24	S	Tachyporus analis.	30.271—30.203	48—23	N.E.	—	57	17	2 23	6	6 32	83
25	SUN	5 SUNDAY IN LENT. LADY DAY.	30.106—29.954	48—40	N.W.	—	54	18	2 28	7	6 13	84
26	M	Tachyporus nitidulus.	30.061—29.876	56—36	N.W.	02	52	20	3 20	8	5 55	85

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 51°, and 33.7°, respectively. The greatest heat, 69°, occurred on the 20th, in 1836; and the lowest cold 14°, on the 25th, in 1850. During the period 113 days were fine, and on 83 rain fell.

SINCE the February meeting of the *Entomological Society*, entomologists have been in a ferment, in consequence of the ill-judged observations introduced by the newly-elected President in his inaugural address, the result of which was made manifest at the March meeting on the 5th instant, when, after considerable discussion, the resolution that the speech should be printed was rescinded. Anxious as we are that harmony amongst the cultivators of this delightful science should be maintained, we will not further allude to the unpleasant circumstances referred to by the President, or to the result which he has, doubtless, unexpectedly provoked, further than to observe, with reference to the expressed intention of printing the address for private circulation, that no one, in the least acquainted with the subject, can for an instant doubt the great abilities of Mr. Curtis, or his untiring zeal in the pursuit of the science. The old proverb may, therefore, be well applied to him, "good wine needs no bush."

After the somewhat stormy discussion above alluded to had ceased, Mr. Samuel Stevens exhibited a very fine series of insects, including many of the greatest rarity, collected by the celebrated traveller Madame Pfeiffer in her late wanderings in Amboyna and Ceram. The specimens had been brought home folded up in bits of paper, or laid between layers of cotton-wool, and had thus arrived in a state of perfect preservation. Insects from these islands are of great rarity. Many have, indeed, been long ago published by the Dutch naturalists, but no recent specimens have been received in this country. We understand that the British Museum has secured the first selection containing many uniques.

Mr. Edwin Shepherd exhibited a curious variety of the common garden *Tiger Moth*, with a red streak down one of the fore wings; also, a *Triphena orbona*, with the fore wings like a *Glaea*.

Mr. Edward Sheppard exhibited a bag of silken tissue, without any seam, used by the Chinese for lapping up the ends of the rolls of spun silk. Dr. I. E. Gray stated that these bags were formed by beating out single cocoons of the common silkworm, and that Mr. Reeves had brought many specimens to this country.

It was announced that a Prize of Five Guineas had been offered by the Society for the best Essay on the species of *Coccus* which produces the *lac-dye of India*; the essay to be forwarded to the Society on or before the 31st December next; and Dr. Royle had stated that the

East India Company was willing to afford all the information in its power relative to the subject.

The Secretary also announced that the Council of the Society was anxious to obtain the co-operation of such of the members as had studied *British Coleoptera*, in the formation and publication of a catalogue of British Beetles, for distribution among the members, and for labelling of cabinets.

Mr. Newman read a notice, by a correspondent, relative to the *Honey-bee of South Africa*, a species not more than half the size of the common hive-bee of Europe; but which was so prolific as to allow the comb to be cut away every six weeks during the whole year. Also, the ravages committed by the common toad, as well as by the woodpecker, upon bee-hives; the latter having been observed not only in the act of tapping at the mouth of the hive, in order to induce the bees to come forth, but also pecking off the mortar from the floor-boards, in order to make additional places of exit for the bees. Mr. Westwood also stated that he had repeatedly observed the common house-sparrow to be injurious to bees, the female birds flying up to the mouth of the hive and catching the bees as they take wing, in order to feed their young ones, which are generally near at hand on the ground, waiting to be fed.

Mr. Newman also read a notice, by Mr. Wallace, on the peculiar habits of two groups of Eastern *Papiliones*, one of which sits with its fore-wings deflexed, like the sphinxes; whilst the other is very strong in its flight, and hovers over flowers like the hawk moth.

Mr. Douglas read a note as to the means of preventing the greasing of the bodies of insects when preserved in cabinets; which led to an extended discussion on the subject, in which globules of quicksilver, placed in cells in the drawers, were stated to be far preferable to camphor, which produces moisture, and, consequently, induces the corrosion of the pins. Immersion of the greased specimens in camphine for several days, and the use of electro-plated pins, were also recommended.

Mr. Waterhouse read a note by M. Ickel, of Paris, on the rare British Weevil (*Onius sulcifrons*), which had lately been taken by M. Chevrelat, at Brest.

A note of Dr. Sehann, of Berlin, was read, on a species of *Cetoniadæ*, recently incorrectly figured by Mr. Westwood as the *Heterorhina bicostata*. Likewise on the species of British *Elateridæ*, recently described by Mr. Curtis, of which he corrected the nomenclature.

A note, by Mr. Janson, was also read, on the nomenclature of Mr. Curtis's supposed new Elateridæ, proving most of the species to have been previously described by continental authors.

THE occurrence of a Poultry Show is a common pretext for disparagement of the popular interest that has of late been manifested in this subject. That beneficial results have been effected by the means thus contemptuously allude to, is, by this time, we apprehend, sufficiently apparent to every unprejudiced mind, but it may still be desirable to say a few words in reference to the utility of such Exhibitions, and the means by which their value may be yet further increased.

Fifty or a hundred years ago, individuals were probably to be found as greatly interested in their poultry, and giving their attention as fully to their favourites, as the prize-lists of the present day have called forth. They were, comparatively, indeed, few in number, and this from the very cause of their lacking the effective advertisement for publicity that the meeting of our present Associations provides. If, therefore, the special object of these bodies, "*the improvement of our breeds of domestic poultry*," has been in any measure attained, our thanks are so far due to the Poultry Show, that places their claims for public consideration on so substantial a basis. Fashion, however, it may be opposed, has had more to do with the movement than its abstract economical importance. But though ready to acquiesce in the belief that what has been termed "the fowl mania," would have been restricted to a more limited sphere of action had not fashion and fancy been included in its recommendations, we resolutely abide by our oft-expressed opinion, that neither the one nor the other of these motives would have advanced poultry-keeping to its present position, had not the necessity of improvement, and its probable emolument in the simple form of a portion of the agriculturist's stock-in-trade been satisfactorily demonstrated.

If we admit that the Poultry Show has done good service as an advertisement of our cause, its value in conducting us to a just estimate of comparative merit and value are not less apparent. The arbitrations, indeed, of even the Birmingham judges, do not carry conviction to the mind of every exhibitor or spectator, and it would be contrary to every-day experience in matters of a similar nature, to suppose that they should possess such over-ruling influence. But in many instances previous opinions do thus undergo a change, and long-cherished but erroneous convictions are either moderated, or altogether dismissed.

It would be difficult, indeed, for the majority to decline the recognition of obvious superiority in a class of some eighty or a hundred pens, side by side, however sternly prejudice might have been blinded to persuasion by the inspection, at intervals, of an equal number of specimens in their owner's yards.

That Poultry Exhibitions, therefore, have already achieved publicity, and thus directed attention to their

peculiar object in a manner otherwise unattainable, and that they have, furthermore, placed us in the only safe path by which a just standard of merit may be gained, will scarcely be contested, and on these grounds their public support might be reasonably solicited. But what may be anticipated of their further progress? Have they already effected all that is within their power? Are they without imperfection? Is there no ground to think that improvement may be practicable?

To the subject matter of queries such as these has our attention been long given, and our answers would confidently point to the present necessarily imperfect condition of even our most advanced and best-conducted Poultry Societies.

Blame is not, indeed, to be attached to them on the score of tardy progress, inapplicability of means to their desired objects, illiberality, or other mismanagement of their affairs. From all such faults many of these bodies are eminently free, and, beyond this, what may now be required would not merely have been impracticable, but also most unadvisable at an earlier period. Their present great desideratum, the goal to which all their former course has tended, is the recognition of "one uniform and acknowledged standard of merit." Such a compilation must include all branches of the poultry-yard, and however fully certain classes may have already received the requisite attention for this purpose, the promulgation of a general summary would have been hasty if undertaken at too early a date. It is not, however, claiming too much on behalf of the leading Exhibitions of the past year to urge, from what we have there witnessed, the perfect feasibility of carrying out such a plan, with the experience and knowledge now in the possession of those to whom such a task would naturally be entrusted. Difficulties there doubtless would be, but assuredly none that can be termed insuperable; none, perhaps, but such as would require for their adjustment any greater portion of time, ability, or experience, than might readily be supplied for the work. If the points on which doubts are now chiefly heard be regarded, they will be found mainly to affect matters of but secondary importance: in some classes the precise form of the comb, and in others minutiae of feather; but the main principles are already sufficiently defined to render the task of easy accomplishment, if undertaken by competent authorities, and the proper feeling. We may now do well what hitherto must have been done imperfectly; and a body of gentlemen might be named, of moderate numbers, say from five to seven, as larger numbers might retard their labours, to whose authoritative conclusions deference would be readily paid. Rules thus promulgated, need not, moreover, be formed on the basis of those of the Modes and Persians, for, either new breeds may hereafter require attention, or the varieties already known may appear susceptible of further improvement, and under such circumstances the summons of the Committee of the Birmingham Society might most fitly be held to constitute the requisite authority for any future reconsideration of the code.

We would press these views most earnestly on that portion of our readers who are interested in the poultry movement, as essential to its full development. While matters are suffered to remain in their present state, discontent and grumbling receive but too often direct encouragement; it is not, indeed, to be supposed that regulations of any kind will, in every instance, silence those by whom they are uttered; but when the decisions rest not merely on the individual opinion of the judges, but on known principles, and the standard in the hands of the public, they will be at once dispossessed of the show of reason by which they may now be sometimes fortified and upheld.

Tabulated statements of what should be required in the several varieties of domestic poultry have been recently laid before our readers in furtherance of this design, and we hope, in an early impression, to give our ideas of the mode in which they would best be applied. In the meanwhile, we would repeat our caution to the Committees of proposed Exhibitions in these words, "Poultry Shows are already too numerous." It may be said, indeed, that if we have attached such value to them as an advertising medium, why limit their endeavours? Our reply in such a case would be, that our remarks were directed only to such of these Associations as provided for the wants of a sufficient area around them, and were thus enabled to carry on their work without the evils of neighbour's competition, and, consequently, with abundant resources, and the requisite liberality. Many of the smaller Societies are now passing away, some even where the pecuniary prospects were far from discouraging; but their projectors felt that they were no longer called for, other bodies in better situations having been brought into existence. Failure of means, however, has been a far more common cause of the present deficient state of many; and laying aside every other cause of merited failure, we might point to the frequent error of their system in declining the expense of providing efficient judges. A Poultry Show thus deficient is palpably worse than useless, for it stamps worthlessness with credit, and does its best to perpetuate the very faults which it professes to condemn.

THE first Extraordinary Meeting of the *British Pomological Society* for the current year was held at the Rooms, 20, Bedford-street, Covent Garden, on Monday, the 5th inst., when the chair was occupied by Dr. Davies, of Pershore.

The collections of fruit which were exhibited were neither so numerous nor so extensive as at the meeting in last November; nor could it be expected they would be so, when the lateness of the season is considered, and also the almost total failure of the fruit crop of last year. Had the crop been such as the abundant bloom promised, there would, no doubt, have been at this meeting an interesting exhibition of many of the new, late varieties of Pears, which have recently been introduced to this country. As it was, however, there was

abundant interest attached to the collections which were there.

The first which came under observation was from Dr. Davies, of Pershore, who, being present, contributed much interesting and useful information respecting the different varieties. They consisted chiefly of Apples, among which was a specimen of the *Flanders Pippin*, a variety which that gentleman had also sent to a previous meeting. At this late season, it was as sound and well-flavoured as it was two months ago. The exceeding tenderness of the flesh, the delicate and pleasant subacid flavour, and the agreeable aroma which this variety exhibits, together with its long-keeping properties, render it worthy of general cultivation. It was stated at the Meeting, that this is a distinct variety from the *Flanders Pippin* of the Berkshire orchards, as described in Mr. Hogg's *British Pomology*, and on this account it would, perhaps, be advisable for the Society, at a subsequent meeting, to distinguish the variety of Dr. Davies by a new name, particularly as the name it now bears is one which is applied in Covent Garden, and in different parts of the country, to many distinct varieties. The *Queen's Delight* was a very handsome, little, conical-shaped, dessert Apple, which was highly commended. Several others, including some of the old cider fruits of Worcestershire, formed part of this collection. Dr. Davies reported upon three varieties of *Seedling Plums*, which had been raised in the neighbourhood of Pershore, and which, from the minute description and high character given of them, were thought to be worthy of notice by the Society; and that every opportunity for testing their merits might be afforded, Dr. Davies has very liberally placed a number of the grafts of these, as well as of the Apples, at the disposal of the Society, to be distributed among the members in different localities, to be proved and reported upon.

G. S. Wintle, Esq., of Gloucester, sent a collection of Apples, and specimens of a seedling Pear, from orchards in the neighbourhood of Gloucester. Among these was the *Carraway Russet*, a very fine and aromatic dessert Apple, which was highly commended; and a seedling variety, raised by Mr. Holbert, of Gloucester, which, though tender fleshed and well-flavoured, was not considered of very high merit. The others were chiefly cider fruit, of which the Society could form no opinion, without knowing the merits of the cider drawn from them. This fact gave rise to a suggestion, that in such cases specimens of articles manufactured from fruits should be sent to the Meetings; such, for instance, as cider, perry, preserves, &c., one of the objects of the Society being "to ascertain the economical uses" of fruits.

Messrs Lane and Son, of Berkhamstead, sent fine, large specimens of the *New Hawthornden* Apple, a variety very similar in colour and in flesh to the old Hawthornden; but in good condition as late as February and the beginning of March. Also the *White Admirable*, one of those tender, white-fleshed baking Apples, which are in good condition at this season.

Some specimens also of Pears from the same gentlemen, among which were good examples of *Easter Beurré*, in good condition.

Mr. Rivers, of Sawbridgeworth, presented specimens of the *Melon Apple*, an American variety, but grown in his own nursery at Sawbridgeworth. This was considered a very valuable acquisition, as being one of those delicate-fleshed and much-esteemed varieties which so rarely come to perfection in this country. It possessed that peculiar tender flesh and flavour which is only met with in imported specimens of Newtown Pippin.

Mr. Smith, of Hereford, sent a collection of Apples from the orchards of that county, which was interesting; but being chiefly cider varieties, no opinion could be formed of them.

Two specimens of Pears from Mr. Thomas Bunyard, of Maidstone, were also exhibited.

The following gentlemen were elected ordinary members:—

Rev. R. O. Bromfield, Sprouston, near Coldstream, N.B.

Rov. P. H. Morgan, Aberclyn, Brecon.

Mr. Henry Bailey, Nuncham, Oxon.

Mr. George Jackman, Woking, Surrey.

Mr. F. A. Dickson, Chester.

Mr. B. Betteridge, Melton Hill, Abingdon.

Mr. Wm. Elliott, gardener to the Marquis of Stafford, Lilleshall, Salop.

HARDY FRUITS.

KITCHEN APPLES.

I WILL now continue my remarks on useful hardy fruits, by turning to KITCHEN APPLES, which are, at least, equally important with those for the table.

First, then, let me name the *Dumelow's Seedling*, alias *Normanton Wonder*, and, I believe, identical with the *Wellington*, which is so highly esteemed in the Midland Counties and in Lancashire. We have nothing superior to this, as far as I am aware, as to any one point. Excellent for baking or stewing, a noble-looking apple, a splendid keeper, the tree very healthy, and a capital bearer; what more can be said? Yes; one other recommendation; it is the tree for a small garden, as it grows in compact form, and does not shade much. In use from November to April.

Keswick Codling; this is a very useful Apple, a great bearer, and a very healthy tree; it is particularly valuable as coming early for kitchen use. No garden should be without it. In use from July to October.

Mank's Codling; a valuable kind, great bearer, very long time in use, excellent baker, healthy tree, loves good soil. In use from August to February.

Bedfordshire Foundling; a hardy tree, good bearer, and much esteemed generally. In use from November to March.

New Hawthornden. I have not grown this, but good judges recommend it; they say it does not canker.

Northern Greening; this, if identical with the *John Apple* of Cheshire and Lancashire, which I believe to be the case, is with us the most important of Kitchen Apples. This Apple, of such importance in the north and north-west, where the air is humid, is little regarded in the south, where a drier air prevails. Mr. McIntosh, of Dalkeith Gardens, says it succeeds well in the damp

air of the West Highlands of Scotland. The tree is remarkably healthy, robust, of rather upright and compact growth, and equally adapted for the Orchard or Kitchen Garden. Excellent baker or boiler. In use from November to May.

Alfriston; a large and noble Apple, much regarded by some. We have not proved this. In use from December to end of February.

It would be an easy affair to swell this list, but my object is to give a selection of what I should esteem as truly useful and profitable kinds. As I have not room to chat over Pears, I will conclude this paper by examining our Plums. The Pears will occupy a chapter by themselves.

GOOD AND USEFUL PLUMS.

Wilmot's Orleans; a good-bearing and tolerably hardy Plum; liked by our orchard-house people for pots. In use through August.

Green Gage; too well known to need description. August and September.

Reine Claude de Bayay; a Plum spoken highly of, and said to be fit for the orchard-house. It is a September fruit out-door.

Magnum Bonum, or Egg Plum; well known; a useful Plum, and sets pretty well; much esteemed by our cooks for preserving. Ripe in August and into September. Succeeds well on standards.

Jefferson; one of the new American Plums, much liked, said to force well; will require an east or west wall in our Northern Counties; a September Plum.

Washington; a robust Plum of the *Magnum Bonum* section; September.

Kirke's Plum; an old and esteemed variety; standard. August.

Reine Claude Violette; a very useful Plum, but should have a wall; a pretty good setter; latish—say September and into October.

Précoce de Tours; a very old Plum, and one of the most useful in the kingdom. This Plum needs re-introducing into culture, probably the earliest Plum in cultivation, and a good flavoured fruit, always bears; ripe in July.

Morono; another early Plum, close on the heels of the former, and nearly identical, I think, with what is called the *Summer Damson* in some parts. A very old and very useful Plum; ripe in end of July.

Coe's Golden Drop; an excellent Plum, but so good, that it is almost impossible to keep the wasps and flies from it. This is, doubtless, an orchard-house Plum; ripe in September and October.

Jaune Hative; spoken well of for pot-culture. An early Plum, July; probably of the *Précoce* class.

Dennyer's Victoria; much in regard among our Plum-forceers. An early September Plum.

Imperatrice, the old, and *Ickworth Imperatrice*, were noted late Plums some years since, but somehow they do not give complete satisfaction; the fact is, that in any of our midland or northern counties, they would as much rejoice in a south wall as a Peach; but they will not pay on such. They are more a matter of fancy than profit under such circumstances, for we have plenty of candidates for our south walls possessing claims far superior to such things.

I will add no more, or there are plenty of candidates. Our nurserymen, as Mr. Rivers, have lots of novelties, and said to possess extraordinary merits. It does not, however, become a writer of facts to indulge in mere opinions. Of one thing we are assured, that a really good thing will soon push its own way; no prejudice can long impede its progress. It is by far much easier to forget the setting sun with all his glories, than not to be struck with his glorious rising the ensuing morning:

just so, it is easier to forget a good old flower or fruit, than to refrain from admiring one, which, in addition to novelty, bears unmistakeable marks of superiority.

A few words about sites, training, &c., may not here be misplaced. In recommending fruits, it is common to affix aspects to them, it may be a wall, south, east, west, or even north. In many lists of fruits, we may find columns suggestive of aspects in rather too loose a manner, I fear. Now what is better, I conceive, as a real and simple guide to the inexperienced, for whom alone we profess to write, is tables which would show the adaptability of fruits to certain assumed centres in Great Britain. I will first assume that the English climate, as to tender fruits, may be thrown into three districts, southern, midland, and northern; Scotland into three, viz., southern, western, and northern; and Ireland into two, viz., south and north. Now, such points, although, it must be confessed, compressed somewhat arbitrarily, would, I conceive, tolerably well assist in giving a more definite point to the question.

For a southern point to England, we might as well take the great metropolis itself; for a midland point, why not say Birmingham? and for a northern, perhaps, Durham. As to Scotland, although I do not profess to be much acquainted with its varying features, perhaps Edinburgh, as south; Argyle, as west; and Inverness, as north. For Ireland, south represented by Cork, north by Fermanagh. Or, if some may think the classification too tedious, we may further simplify the affair by taking England, Scotland, and Ireland in the lump, and say thus, London, York, Edinburgh, Inverness, and Fermanagh; for there would not be much need, in this case, to assign any peculiar importance to the south of Ireland.

All this is, I confess, bold enough, and would, doubtless, be the better for the revision of one more conversant with the peculiarities of our insular climates than I pretend to be. My observations, however, are simply offered as suggestive of a consideration of this question; and I shall be most happy to confess to my extreme of opinion, and to be set right by better heads, and those more experienced in climate; with this clause added, that such experience must combine with it an intimate knowledge of our fruits and their peculiarities. It must be remembered, however, that the character of the air, as to humidity, is to be taken into consideration, for it may not be settled by mere tables of temperatures.

Our new Pomological Society, which promises great things, will, doubtless, take such affairs in hand, and with a congregatory of men of real experience, occasionally we shall attain sounder views concerning fruits.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY,

MARCH 6TH.

HER Majesty did not exhibit at this meeting; and as the royal table is allowed, on all hands culinary, to be the best served in this country with fruits and vegetables, generally, you might reasonably suppose that the meeting lacked the best things for table at this critical season for gardening, when the last year's stock is well-nigh over, and that of the coming season is but just breaking bud, as it were. Not so, however; but there is one treat in Her Majesty's garden exhibitions which is genuine English, and which, if it were more strictly attended to by Scotch gardeners, would help, more than anything I can think of, to keep up the credit of the "dear old country" for good gardening, and that is, never to exhibit any fruit or vegetable which if not quite first-rate is very nearly so. Certainly, we never see anything of an inferior description, in public, from the

Royal gardens; but although I refrain from mentioning names, or titles below the crown, I must remark, in a quiet way, that "A Market-gardener" had the tide on his side of the question very decidedly to-day; and he might very well exclaim, that if gentlemen's gardeners do not know how to produce better things, they have yet much to learn, and very much to account for.

Is it not strange that the handsome prizes which are now offered by the Society for vegetables do not bring out anything from the market-gardens round London? There is, and must be, some very strong reasons for this; for nine times out of ten the market-gardeners could sweep off the whole of the prizes. We had nothing first-rate, or even second-rate, to-day in vegetables, except one bunch of *Asparagus*, one of forced *Chicory*, one of *Mushrooms*, and one dish or leach of *Cucumbers*; but we had some vegetables which were, absolutely and altogether, not fit to be thrown into the hog-tub. I never felt so ashamed in all my life as I did under a cross fire from two French gentlemen whom I had never seen before, but who opened an allied fort against me in the library just as I was completing my notes. All I could say was, that our best vegetables went to Balclava this year. But my own private opinion is, that the system of classing vegetables by the Society is on a wrong basis.

To make up the requisite number of dishes for a class, I see the very best gardeners are compelled to send Mustard and Cress, or some other trifling article, which a poor apple-woman could force in her cottage window just as well as a gardener could. Then Celery and Endive are not "forced vegetables" at all, but they come under that head, and take away prizes. I believe we can grow Celery and Rhlbarb against all the world; therefore, there is no need of giving a prize for either of them. There is little art, and no science, required to provide a salad of Mustard and Cress every day in the year, if one has a mind; an old broken tea-cup and a cottage window could supply one in the middle of the frost; therefore, I can see no earthly use in giving a prize for Mustard and Cress. But one never sees a forced *Lettuce*, large, crisp, and juicy, in winter; and it would be worth while to offer a good prize for six of them in January, February, March, and April. The truth is, however, that in this cold climate nine persons out of ten shudder at seeing a fountain at play after the middle of September till next May, or a salad-bowl from October to March. From this it results that not one out of a thousand think of devoting a three-light frame for winter Lettuce.

Mushrooms are still open to vast improvement. There is not a better or a more wholesome vegetable than a well-forced Mushroom; but all that have been sent to Regent-street, for the last few years, were grown in an atmosphere which was too low and too dry for them, and when that is the case, they are not nearly so good, nor so wholesome. It is very rare indeed that you can pick out a good dish of Mushrooms in Covent Garden Market after the middle of November.

Then, who are right about *Asparagus*? A particular friend wrote, desiring me to give the length, the thickness, and the weight of *Asparagus* in my report (see page 463). Well, to please him, here it is; the largest, the longest, and the heaviest at this Meeting, was sent from Covent Garden, by Mr. Solomon, one of the great salesmen there. The longest *sticks* were just fifteen inches long, two inches round in the thickest part, and as heavy as a stick of oak or holly three times the size; but what then? It had no colour, no succulency, and as to flavour, it must be all gone long before boiling could make it sufficiently soft; and after all, thirteen inches out of the fifteen are a dead loss, for no mortal jaws could tear it lower down. My idea of good *Asparagus* is to have it from seven to nine inches long,

one inch round the thickest part, dark green at the point, and light green down to the last inch-and-a-half, or, at most, no more than two inches blanched, and the blanched part should be the only waste; all the green ought to be soft and high-flavoured.

I would also be very particular about *Radishes*; I would have them long and thick, and to snap like glass, and eat like nuts; but there should not be a single fibre on them except the very point, which ought to be a small fibre. *Turnip Radishes* ought not to be either large or small, but of a medium size, clean-skinned, and as solid and crisp at the core as on the outside.

In January, February, and March, *Early Potatoes* should not be smaller than a thrush's egg, nor much larger than a pigeon's egg, I mean for competition; in a private way, and when they are mashed for the table, the size is of no consequence. The same is the case with *Cucumbers*, which are cut and sliced in the pantry, or still-room, before they are served up for table. I would put more stress on the shape, and size, and colour of a Beet-root than on those of a Cucumber, and there is more art in growing a first-rate Beet than in forcing a prize Cucumber, although few would believe it.

A Beet root is not fit to be judged unless it is cut into two halves, lengthwise, by the judges; and if there is a single streak lighter or darker than the rest, I would disqualify it. The colour throughout should be that of port-wine. When one knows how to boil such a Beet, and how to serve it, there is not a better or a more telling dish from the kitchen garden; but half the world treat it, from the seed to the stomach, no better than Mangold Wurtzel.

PINE-APPLES.

But my report begins with *Pine-apples*. They were numerous, and very good for the season, not particularly large nor weighty, but such as are always very useful for dinner-parties. Mr. Davies, gardener to Lady Bridport, Mr. Fleming, and Mr. Dodd, gardener to Colonel Baker, of Salisbury, sent the best Pines. Mr. Davies sent a *Black Prince*, weighing 6lb 4ozs. a long, tapering fruit, with a reddish skin, and a *Smooth-leaved Cayenne*, weighing 4lb 3ozs. These were from suckers growing on old stools, from which larger fruit was cut last July and August. Mr. Fleming sent a *Smooth-leaved Cayenne*, weighing 4lb 12ozs., a large, handsome Pine, and another of the same variety, weighing 5lb 4ozs., which was much admired. Mr. Dodd sent a *Smooth-leaved Cayenne*, weighing 4lb. Mr. Bray, gardener to Captain Lousada, of Peak House, Sidmouth, sent a *Ripley Queen*, 3lb 1 oz., which was remarkable for the clear, bright colour of the skin. Mr. McEwen, gardener to the Duke of Norfolk, sent a *Smooth-leaved Cayenne*, weighing 2lb 5ozs., and a *Prickly-leaved Cayenne*, weighing 3lb 10 ozs., both handsome fruit; and Mr. Henderson, gardener to Sir George Beaumont, sent a *Queen*, weighing 3lb 1 oz. There was a medium-sized *Providence*, weighing 4lb., from Mr. Page, gardener to W. Leaf, Esq., Park Hill, Streatham. This variety is fast going out of fashion, making room for the more superior-flavoured *Cayennes*.

STRAWBERRIES.

There were two small dishes, one of *Keen's Seedling*, from Mr. Brown, gardener to — Farrel, Esq., Waltham Abbey, Essex, and one *Black Prince*, from Mr. McEwen, at Arundel.

GRAPES.

Mr. Forbes, gardener to the Duke of Bedford, and Mr. Jennings, gardener to Earl Derby, sent new *Black Hamburg* Grapes, both very good; but those from Mr. Forbes carried the day.

PEARS.

These were splendid, and Mr. Tillyard, gardener to the Right Honourable the Speaker, had the first prize, with six *Ne Plus Meuris*, five *Easter Beurré*, and six *Beurré Rance*; all as fine as ever were sent to table. Also a separate dish of *Knight's Monarch*, which Mr. Tillyard assured me kept as long and as well as *Beurré Rance*. It is, therefore, one of the very best late Pears, and is more hardy than any of the Flemish Pears. Mr. Snow, gardener to Earl de Grey, sent a collection consisting of six *Glout Moreau*, remarkable for keeping so late; six fine *Easter Beurré*, six *Old Colmar*, and six immense *Uvedale's St. Germain's*. Mr. Robertson, gardener to Lady Emily Foley, at Stoke Edith Park, Herefordshire, sent six of his fine *Chamontelle*, six *Winter Crassane*, and six *Beurré de la Motte*. Mr. Smith, gardener to Mr. Reay, Wanstead, sent six *Glout Moreau*, six *Easter Beurré*, and, strange to say, six *Catillacs*, a large, old, stewing Pear, and the best of that class when I was a boy. I recollect taking shelter under a *Catillac* Pear-tree, in Perth Nursery, and being nearly stunned by the fall of these hard Pears in one of the heavy gusts; and there was an enormous crop of them that year; but their pale colour is against them. Cooks, now-a-days, prefer a pale yellow, or a purplish tint, in stewed Pears.

APPLES.

Mr. Snow and Mr. McEwen sent large assortments of beautifully kept Apples. Mr. Snow had the best-looking for the dessert; but Mr. McEwen had the rarest collection. The former had six *Bedfordshire Foundling*, six *Court Pendu Plat*, six *Golden Noble*, six *Kirk's Golden Reinette*, six *Old Golden Reinette*, six (*London*) *Golden Pippin*, six *Scarlet Nonpareil*, the only kind not quite up to the mark; six *Robinson's Pippin*, new to me; six *Cockle Pippin*, a small, greenish kind; six *Bull's Golden Reinette*, a handsome, flat, yellow Apple, full of small, black dots, also new to me; and others, with the beautiful *Selene* Apple, which I have not seen since I left Edinburgh, where it was new in 1828, and where it was not worth eating, from a south wall covered with glass-lights. I tried the same plan, in Herefordshire, with the beautiful Italian Apple called *Mela Carla*, but I could make nothing of it.

Mr. McEwen had *Hamilton Pippin*, a large, streaked Apple, which I never saw or heard of before; *Beachamwell*, *Wheeler's Russet*, *Minchall Crab*, which used to be much called for when I was in Perth Nursery. *French Crab*, as green as the day it was gathered, and as hard as a leaden bullet, a first-rate kitchen Apple, that will keep ever so long after Apples "come again;" the *Lady Apple*, by some called *Api Petit*, *Scarlet Pearmain*, *Cornish Gilliflower*, *Reinette du Canada*, very fine; *Norfolk Beaufin*, *Northern Greening*, *Gloria Mundi*, *Cockle Pippin*, *Kirk's Scarlet Admirable*, a fine-looking, large Apple of the Colville shape; *Spanish Pippin*, a streaked Apple, which I never heard of; *Baxter Pearmain*, *Alfriston Pippin*, one of the very finest of our large kitchen Apples; *Court Pendu Plat*, *Golden Harvey*, and *Api Noir*, a black Lady Apple, as one might say; a small, flat, crab-like Apple, of no earthly use that I know of; but the true Lady Apple, or the *Api* of North America, is the prettiest little Apple in the world.

FORCED VEGETABLES.

Forced vegetables were moderate enough, as may be gathered from the first part of my observations; but there was a bunch of very good *Asparagus* from Mr. Tivey, gardener to J. H. Elwes, Esq. of Colesborne Park, near Cheltenham. I am always glad to see that part of the world taking prizes; but Gloucesters are Gloucesters

all the world over, for they never try their luck in London nor Worcester either. Cheltenham lies in the south-east corner of the garden of England, with a beautiful prospect, and fine climate; it is sheltered from the east and north-east winds by the Cotswold Hills, which form an immense amphitheatre on that side; to the west you can see as far as the eye can reach, and it is open to the south; every kind of soil, from the heaviest clay to the most hungry of black sand, is found in the immediate vicinity. It is more fashionable than Bath; the saline springs are better for all kinds of liver complaints than any other in England. With these and other advantages, you can get better Asparagus in Cheltenham than anywhere round London; but I have seen very poor Mushrooms come from Cheltenham as well as other parts of England. The best *Mushrooms* at this meeting were from Mr. McEwen, from Arundel Castle. The best forced *Chicory*, or Friar's Beard, or, as they say in Covent Garden, *Barbe du Capuchin*, was from Mr. Fleming.

The best *Cucumbers* were also from Mr. Fleming; a seedling of his own, with a dash of the *Sion House* Cucumber in it, but is a totally different "fruit," being a very long, slender, dark green, with white spines, and no sign of ribs, very short handled, and the dry flower yet on the nose, at twenty inches from the stalk. I know Cucumbers as well, if not better than most people, except Mr. Wild, of Ipswich, and a few more who are half mad about them in that quarter. If it were not for the war and the double income tax, I would stake ten to four that I could get a Suffolk waggoner, near Ipswich, who would grow better Cucumbers at less cost than a nobleman's gardener. Mr. Fleming's Cucumber would not "take" in Ipswich; but from first acquaintance I should say it was a most useful kind, and one which will drive the *Sion House* out of the framing ground.

Wo had *Sea-kale* nearly in bloom! *Radishes*, as hairy as my dog Ossian! *Potatoes* like ants eggs! *Lettuces* like rib-grass! *Mushrooms* as if they were stamped out of old leather boots! and—but I will mention full names and residences, if ever I see our money spent in this fashion again.

MISCELLANEOUS.

The odds and ends, on the contrary, were most interesting. There was, from the rich museum of Dr. Royle, an immense variety of Indian produce for making all sorts of textile fabrics, from a cable rope to a queen's letter-paper; and he was there himself, and could give their Indian names, their Sanscrit, and all other names on to botanical; their different uses, how much yield per acre or per ton, the worth of this, and the market-value of that. There was a long web of natural *Bark-cloth* from Borneo, perhaps from Sarawak itself, which would do famously for "sheets" during frost, it was so soft, so warm, and comfortable-like. This was the inner bark of a kind of Paper Mulberry. But all such things belong more to the Society of Arts than to Horticulturals; still, it is right to keep them on the give-and-take principle.

Mr. John Henderson, of Kingskerswell, sent pieces of beautiful paper from the fibre of his China Sugar-cane (*Holcus saccharatus*). There were many other things in the same way to be seen or heard of at the meeting, but not much in *our* way. There was "cauld Kale from Aberdeen," or, rather, from Mr. Fleming letting people into the secret that Highland Kale stands the frost without any harm; while every blade of all other Kales which was above the snow, perished, and those below the snow were blanched. In Scotland, they call these *German Greens*. The Borecole, or Scotch Kale, or German Greens, round here, were not the least hurt, as far as I can see.

Mrs. Compton, of Blackheath, sent two kinds of *wicker baskets* to stand flower-pots in. The top and bottom rims were seen, but the rest was covered with leather, stamped to look like leaves, fruit, and flowers; a very good idea, if they can be made cheap. Glass-stands are so liable to break, and China-stands are so very dear, that many people who would use these contrivances for holding or hiding pots on their tables, and through the rooms, cannot afford the luxury; and I have often thought the cheapest things for such purposes would be zinc and gutta-percha; they can form zinc into any pattern, and the outside might be enriched to any extent with patterns in gutta-percha, and any tint or colour could be given to the gutta-percha. For *Rustic Baskets*, this is the right process to make them for the flower garden. Rustic baskets made out of pieces of soft wood, and varnished, are, to me, the most paltry and trumpery things that ever cockneyism or any other ism invented for "paying through the nose" for a thing. But I like the shapes and sizes for heightening the interest of small gardens, if one could get durable articles to last a lifetime without repairs or breaking down.

There was an ingenious *Hoe*, with a swan-neck, from Mr. Wood, gardener to C. R. Scott Murray, Esq. The blade was like that of the common draw-hoe, and from the centre of the cutting edge a peak, like a mason's trowel, advanced six inches. A most dangerous implement in the hands of a daft body; but really a good tool when you get used to it.

D. BEATON.

SPERMADICTION AZUREUM.

THE above plant is also rather generally known under the name of *Hamiltonia scabra*, commemorative of Mr. Hamilton, a Philadelphian botanist, who, it is said, erected the first house for exotic plants in North America.

The plant is an evergreen in Nepal; but when cultivated in a cool plant-stove, or a warm greenhouse, it becomes next thing to deciduous, and succeeds quite as well as when rendered more evergreen in its appearance by a greater degree of heat. As a winter-flowering plant, it is well worthy of cultivation, producing its pale lilac-blue flowers along the upper part of the young shoots of the current year. The following points will embrace the characteristics of its management:—

1. *Propagation*.—This is easily done by two modes. First, when the plant has finished flowering, the shoots pruned off may be cut in pieces, having a bud at the base, and another at the extreme end. Cut clean across at the base of the former, and in a sloping manner, half-an-inch above the latter. Insert these cuttings in sand, in a well-drained pot, and plunge in bottom-heat. These will strike, but they require a fair amount of time. The second mode is to wait until the young shoots break from two to three inches in length after pruning back. In fact, if many cuttings were wanted, the points of the shoots should merely be removed, and the pruning left until a sufficiency of young shoots were procured, as lately recommended for *Clerodendrons*. These young cuttings should be slipped off close to the old stem; the base of the cutting dressed there by removing a few of the lower small leaves, and then be inserted round the side of a small pot, three-parts filled with drainage, and then a little sandy-peat, covered with silver-sand; the small pot then placed inside a larger one, the space between filled with sand, and the bell-glass to stand between the rims of the two pots. A little air will require to be given at night, more especially if the pot is plunged to its rim in a sweet hotbed of from 75° to 80°, and top-heat from 65° to 75°. These last will make

the nicest plants, and will generally be fit to pot off in a month or so. If the cuttings are made in March, or the beginning of April, small flowering plants may be obtained the following year. But, in general, they will scarcely be strong enough to bloom until the second year. As soon as potted, keep rather close and growing freely until September, when they should have more air, and nearly all the sunlight they can get. If it is desirable to flower the young plants, they should have been grown to one shoot, and this from two to three feet long, in a five-inch pot, will look nicely with its pendant, tapering bunches of bloom. Plants thus expected to bloom should be kept rather dry in October and the first part of November, until the bloom-buds appear, when water should be given rather freely. When in this dryish state, the temperature should not be too high—about 55°; when in bloom it should rise from 50° to 60°, and be rather airy and dry, as the bloom is easily injured by moisture. After blooming, cut off the points of the shoots, and let the plant have little water, and a dryish temperature of from 45° to 55°, which will be quite sufficient when the plant is in a state of repose. In general, however, unless the cuttings have done well, and been extra well managed, you must be contented with hardening the wood of the young plants, and keeping them over the winter for the first season, giving them a sort of rest period by a minimum of water, little moisture in the atmosphere, and an average temperature of from 45° to 50°.

2. *General Cultivation.*—Supposing that you have some young plants thus wintered, the first thing to do is to prune them early in March, so as to leave buds to break into three or more shoots, according to their strength. Allow them to remain a week or two after pruning back, and then give them more moisture at the roots and by syringing the stems. If they could get a small amount of bottom-heat, it would be all in their favour, until they had broken freely, been repotted, and were growing vigorously, when the pots should be raised gradually out of the bottom-heat. When the young shoots are about one inch long, repotting should take place, usually replacing in similar sized pots, after getting rid of a good portion of the old soil and using fresh.

In six weeks or two months they will want another shift, if all has gone on well. The soil should be equal parts of turfy loam and fibry heath-soil, with a little leaf-mould and silver sand. A closish, moist atmosphere, may be maintained, to promote rapid growth, until August, when more air must be admitted, and more still in September and October. In warm days, in the beginning of October, the plants will relish being fully exposed to the sun, and receiving no more water than will keep the leaves from flagging. The heat should not, however, fall lower at night than about 45°. When placed in a cool stove, about 50° to 55°, in November the flowers will soon begin to appear. Manure-waterings then, and when growing at Midsummer, should be frequently given.

The chief point in growing, when more shoots than one are allowed to a plant, is to endeavour to have these as equal in strength, and as equally exposed to sun and air, as possible, or they will either not bloom regularly, or not at all. In pruning, it is easy to cut so as to have a centre shoot, and from two to three or four shoots lower down round it; but the chief thing is to have all these nearly equal in size. A number of small shoots, or twigs, near the base of stronger ones, act just as so many robbers, and will not generally reward you with a bloom. As already indicated, one single shoot, in a nice little pot, looks well in a small house; for these reasons, it will seldom be advisable to keep a plant more than two or three years. When older, and assuming the bush style, the shoots should be cut back every winter or spring, nearly as freely as a willow stool.

Though this plant has been introduced thirty years, it is not seen very often, yet its pale, bluish, small flowers, something resembling those of the *Ceanothus*, render it worth growing by those who can command the necessary heat. At two periods, when the shoots are very young, and again, when the flower-stems appear, the green-fly will nibble it if it can, and must be destroyed by tobacco-smoke. The fly, and a damp, stagnant atmosphere, when the plants are in bloom, are the chief things to be guarded against.

CONOCLINIUM IANTHEMUM.

This is another beautiful light-blue-flowered plant, that generally blooms freely in the late winter and early spring months, though it would do so almost at any time, according to the treatment it receives. Like the first-named, it also requires an intermediate house to do it justice. Instead of blooming in anything approaching the spikelet form, it resembles more in habit and manner of flowering the *Ageratum Mexicanum*. The latter plant, either in its common or variegated form, is no unworthy ornament to the greenhouse in winter, and makes a fine ornament to the flower-garden in summer. It was supposed the *Conoclinium* would make a good bedding-plant; but I am as yet ignorant of any successful trials of it. I shall allude to it as an ornament for the plant-stove or warm greenhouse in winter. Premising that it is rather more woody than the *Ageratum*, the following may sum up the points in its culture.

1. *Propagation.*—Cuttings of young shoots, or even of last year's that have stood over the winter, will strike freely in a little sweet bottom-heat of 75° to 80°, with a top temperature of from 55° to 65°. March and April are very suitable times, though, if placed in the cutting-pots earlier, the plants would be larger before winter.

2. *Potting.*—As soon as rooted, the young plants should be placed singly into four-inch pots, kept closish, and in a moist atmosphere, when they will soon want a larger pot, and may again be repotted before the end of July. An eight-inch pot will grow a nice little specimen.

3. *Soil.*—Peat and loam, with a little leaf-mould and silver sand at first, continuing the same with more loam, and an addition of about one-fifth of dried nodules of cow-dung at the last shifting.

4. *Stopping the Shoots.*—If you can manage to get a nice, bushy, flowering Chinese Chrysanthemum plant, from a cutting in spring, you will have no difficulty with this *Conoclinium*. As soon as potted, and beginning to grow freely, stop the shoot, or shoots, so as to cause the back buds to break. If these do not yield a sufficient number of shoots, nearly equal in size, stop them again; but the stopping should not take place after the end of June, or there will be a risk of the young shoots not being sufficiently matured to bloom, and, therefore, the shoots would be so far useless.

5. *Watering.*—When growing, this will be wanted freely, and if manure-waterings alternately with clear water are given, so much the better; when in bloom, it will require a fair amount of water at the roots, but rather a dry atmosphere; and very little water when the plant is in comparative rest after blooming. When growing, syringing every afternoon will be relished.

6. *Position, Temperature, and General Culture.*—A close, moist position, with a temperature of from 60° to 75° will suit it best when growing. A shady place will do no harm at first. As the shoots exceed six inches in length, they should gradually be inured to more light, and the plant be brought near the glass, that the shoots be not drawn weak. Secure the shoots as equal in size as possible, and fasten them to twigs so far apart that the leaves will have room to expand themselves; any small shoots should be nipped away, as creating

confusion, and not likely to bloom. In August, give more air; more still in September, and little water in October, so as the plants do not flag. Do not let the plants, even when comparatively dry, get below 45°. When put into a temperature higher by 5° or 10°, the flowers will soon show, and very likely will have been showing before, if the shoots were not stopped after the end of June. In a bright, sunny day, in winter, the foliage might be gently dusted with the syringe; otherwise, the atmosphere about the flowers should be dry, and from 45° to 55°. When done flowering, the tops of the plant should be pruned off, and the plants kept rather dry, in an average temperature of 45°.

In this they will lose the large leaves. In spring, prune back freely, leaving one or more buds on each spur; the parts cut away, or the young growth to come, will do for propagating. Such one-year-old plants grown on a second year will make large plants, if with plenty of pot-room. As young plants look nice, it will seldom be desirable to keep the plants after two years. Green fly are fond of the young shoots, and if kept hot and dry together, the red spider will soon spoil the beauty of the foliage.

ARDISEA CRENULATA.

"I have kept this plant in my greenhouse for several years, the temperature averaging, during the winter, 45° at night, seldom lower; but this season, the points of the leaves look as if they had burned." This is a plant that always commands attention, from its neat, trim habit, and the number of red berries it almost constantly carries after it has risen two years of age. The flowers are small, whitish, and nothing to arrest the attention. The plant may be considered a miniature Holly-tree for houses, having a plentiful supply of red fruit without the prickly foliage. I suspect the plant alluded to got burned by the frost, in one of the late severe nights. I have had this *Ardisea* for short periods at 40°; but I never found it would stand much lower than that for any lengthened period. From 45° to 50° may generally be considered the lowest temperature in which this West Indian plant can remain healthy. An average of 45° in the winter months, with a considerable rise from sunshine, will only maintain the plant healthy, and well supplied with its beautiful, persistent, red berries; when a close, moist, warm atmosphere is used in summer to encourage growth. In a house averaging 50° in winter, and not often below it at night, there will be less necessity for peculiar summer treatment.

Few plants are more easily grown, or require less trouble in the way of stopping or training. In fact, when a plant is raised from a cutting, and the point allowed to grow on, or from a seedling whose axis of growth is not meddled with, it is the best policy to let well alone, and do nothing whatever in the way of pruning or training. The young plant, however raised, will grow as upright as a line; but as the stem rises, it throws out in a season two or three tiers of alternate side-branches. It thus naturally, at first, takes the conical form. In the second year, if not before, these side-branches yield their small sharp-pointed flowers, followed first by green and then by red fruit. When a plant is four feet high, and, perhaps, five to seven years of age, you will have a growing point, and some very small side-branches; some side-branches, six inches or so in length, carrying flowers; others, farther down, very likely with green berries; another layer with bright red berries; two or three layers, farther down still, with berries, one, two, three, or more years old; the last losing their brightness, becoming black, and dropping from the symmetrical plant; while, perhaps, below all that, you have a clean, naked stem; as after the berries hang two or three years, the small side-branches

that support them fall off of their own accord. The longer you keep your plant, therefore, the higher it will get, and the greater will be the length of a clean, naked stem, as the lower branches will drop off every year. The plant will manage all for itself, without troubling you to prune, or tie, or bend. The following are the chief points in its simple management. Few plants would be more ornamental in sitting-rooms in winter, if not kept too long.

1. *Propagation*.—Seed sown in a hotbed will give nice little plants in two years. Cuttings of the young shoots, placed in heat under a hand-light, will strike readily. The side-shoots do not make such nice plants as seedlings. Pieces of the roots placed in a good, strong heat, throw up nice plants, that grow well when treated as rooted cuttings.

2. *Soil*.—Peat and loam at first; increasing the loam afterwards, until it forms the greatest portion.

3. *Position and Temperature*.—The latter has already been alluded to. When intended for a warm greenhouse, in winter, a close pit, in May, June, and July will be of much benefit to it; as merely by curtailing air it will be easy to give often a temperature ranging from 70° to 80°. In August and September, more air should be given. I have never found the plant benefited by removing it from under glass for any period.

4. *Watering*.—As the plant is kept constantly, and, except during summer, slowly growing, there is no regular rest period, and watering must be regulated according to the wants of the plant and the weather. A seven or nine-inch pot will grow a nice specimen.

5. *Insects*.—I have never seen this plant interfered with when it had anything like justice. Bug and scale I have seen on a tree, and then it is best to commence with a seedling, and throw the infested plants to the rubbish-heap.

R. FISH.

ADVICE TO YOUNG GARDENERS.

(Continued from page 414.)

THE next head on which I purpose writing is *Civility*. Dr. Johnson explains this word, "politeness, kindness, freedom from barbarity." In these senses, every man ought to possess civility; but especially the head-gardener. A man, holding such a situation, has to meet and converse with high and low, rich and poor, and also with what are called the middle ranks of society. It behoves him, then, to study how he ought to address himself to each and all of those persons. To the high in rank, and wealthy, there is small fear but he will be civil; his self-interest will teach him the policy of doing so; but, on the other hand, let him take care not to exhibit a crouching, servile behaviour. If he possesses ability in his profession, and is tolerably well read, he will have self-respect, and still render honour to whom honour is due; but not to excess. If, for instance, he is called upon to converse on gardening with a Duke, he will, in the first place, make his polite bow, lifting his hat, and then answer any question by first saying, "Yes, your Grace;" or, "No, your Grace;" and after having given the gentleman his due as to title, he will then give his opinion, or advice, without interlarding every sentence with Your Grace, or My Lord, or My Lady, as the case may be. Our nobility are too well bred to require such servility, and they would turn away with disgust from such nauseating doses of cringing homage; such behaviour is not politeness; it is barbarity.

Then let my friend take equal care not to speak to his inferiors, even to the poorest, with rough language, and a domineering manner. The Apostle Paul says—"Be courteous;" and he does not say be so only to the rich, but to all. It is by the language that a master uses to

men that I would judge him as a man; here Dr. Johnson's second definition of the word civility applies, that is, kindness. A master is not required by the laws of civility to lift his hat and make a polite bow to his servant, or inferior, but he is bounden to treat him with kindness. If the poorest beggar were to say to me "Good morning," I am bound, by the rule of civility, to return the good wish, and say "Good morning" in return. This definition of the word kindness pleases me the best. If a man under me is sick, I consider it is my duty to visit him, kindly enquire after him, and express gladness when he is better. "This is civility in the best sense. Again, if a man conducts himself properly, does his duty well, and strives to improve himself, it is the duty of the head-gardener to encourage him by kind words, and do his best to put such a deserving young man forward, and, when he is qualified, to recommend him to a higher position; this is again civility in its best sense—kindness.

Every head-gardener will, as a matter of course, be civil to his brother gardeners when they call upon him to see his place. In this respect, I may challenge any other profession for civility. I know no body of men that are so kind to each other as gardeners; there is a sort of freemasonry among them. If they have never seen each other before, the moment the one says to the other, "I am a gardener at such a place, and have called upon you" (with very few exceptions), the hand is held out by the visited, and a hearty welcome given. I have, in my lifetime, visited, I may venture to say, hundreds of gardens, and have always been treated with the greatest of civility in its best sense—kindness; and I cannot let this opportunity pass without returning my sincere thanks to all my gardening brothers that may read this number of *THE COTTAGE GARDENER*, for all their kindness to me.

Then, again, the head-gardener will come in contact with many tradesmen, such as carpenters, bricklayers, painters, hothouse-builders. He will have to employ these men under his direction, and he is bound to treat them with civility. He will be a kind of judge between his master and them. He must see that they do what is right, and, when they have done so, to report that to his employer. If they do not do right, he must in a firm, yet civil, manner reprove them; and, by so doing, he will do not only an act of civility, but of justice.

Lastly, the head-gardener will have fellow-servants—the steward, the cook, the farmer, and the butler. These must all be treated with the greatest civility; they are his equals, and, therefore, deserve all kindness at his hands. In some places the steward is an agent also, and has often considerable power; the owner placing that in his hands. Many head-gardeners look upon this officer with unpleasant feelings. I think this wrong, because he must have known, before he engaged the place, that such a person was employed to save the owner trouble, and, therefore, I think he ought to submit to such a man in all reasonable things, and treat him with civility and respect for his office sake. The farmer, or bailiff, and the gardener too often view each other with antagonistic feelings. Both require the same article (dung) in the utmost abundance; the only fair and equitable way of adjusting their equal wants is to have a fair understanding at first with their employer. It is for him, and him only, to decide the quantity each should have, and after his decision there ought to be no unkindness between the two; but they should become good friends, and treat each other with civility. The cook is the next fellow-servant to whom the head-gardener should be kind. The best way to be friends with the cook, is to let the kitchen be well supplied with fruit and vegetables; and, as I remarked in my last paper, to keep an account of the quantity of

everything supplied. The butler will require his dessert of fruit also, and to him all due civility must be given. I always made it an especial point to have the fruit sent or taken in at least two hours before the dinner-bell rung, and if it was agreeable to the butler, I dished the fruit up for him myself. This often led to many acts of civility and kindness between us, and had the happiest results.

I find I have written more on this head than I intended; but so much of the head-gardener's comforts depend upon this point, that I trust my prolixity will be excused. The next head, namely, Visiting Gardens, Nurseries, and Exhibitions, I must defer to another opportunity.

T. APPLEYBY.

(To be continued.)

GREVILLEA LAVENDULACEA.

(LAVENDER-LIKE GREVILLEA.)

The genus *Grevillea* is a moderately large assemblage of plants, many of them of a rigid, Holly-like habit, with inconspicuous flowers; hence, they are not in general cultivation. The species I have selected, is, however, an exception; it is worthy of a place in every greenhouse.

History.—It is, like all the genus, a native of Australia. The seeds were collected by the late Mr. Drummond, in the Swan River settlement, and transmitted to England four or five years ago. Messrs. Henderson, of Pine-Apple Place Nursery, first flowered it, and possess now a large stock of nice, bushy, young plants. I saw them a few days ago, and was so much pleased with the plant, that I determined to bring its merits before the readers of *THE COTTAGE GARDENER*.

The habit of the plant is a low, branching shrub, with narrow, whitish leaves; the whole bush having much the appearance of a very narrow-leaved Lavender. The flowers are produced, generally, in fours, very copiously, at the ends of almost every shoot. The form of each flower is something like a blunt hook, the bended part being at the extreme end; the anthers project considerably beyond the calyx, and are very conspicuous in consequence. It is a very elegant, desirable plant, and is of the easiest culture.

Culture.—Procure a plant, any time in April or May, and repot it in a compost of two parts sandy peat, one part fibrous loam, and one part well-decomposed leaf-mould; mix these well together, and add a liberal addition of roughish sand. Choose a clean pot, and drain it well in the usual manner. If you wish for a large plant in a short time, let the pot be three sizes larger, and place the plant in a medium stove, or a warm pit, giving plenty of air, and stopping the strongest shoots occasionally. It naturally branches freely, but strong shoots will sometimes take the lead and rob the rest. To cause uniform growth, these must be stopped in an early stage. A single stick in the centre of the plant will be necessary to train a centre shoot to; but this must have the top taken off also, to cause side-shoots to be produced. It is a very manageable plant, and, with moderate attention, will form a handsome pyramid, the best of all forms for most plants. During the spring and earlier summer months, give frequent syringings over-head, shutting up early in the afternoons. The plant will then grow rapidly, and the first year form a tolerably-sized bush. About the middle of August expose it to the full sun, and at the end of the month set it out-of-doors in a sheltered place, on coal-ashes, giving due supplies of water. The shoots will, by this treatment, become more robust, and be able to produce stronger flower-buds and larger flowers. Just before the frost makes its appearance remove the

plant into the greenhouse. Place it on an airy part of the stage, well exposed to the light, and give very moderate supplies of water. If kept wet the roots will perish. Keep the thermometer just above the freezing point; that heat will be sufficient for it. Two or three times during the winter remove all moss from the surface of the soil, and, if the pot will hold it, give a top-dressing of fresh compost. Should the pot become green let it be carefully washed off. The season of flowering is early, but by keeping it cool through winter and spring it may be kept to bloom for the first show in May. By attending to these points in culture, this elegant plant will repay all the cultivator's pains, with its curious, pinkish-red blossoms and pretty leaves.

Propagation: By Seed.—This plant often produces seeds. Gather them as soon as they are ripe, and sow them immediately. Sow them in the compost in well-drained shallow pans, cover slightly, and water with a very fine-rosed pot, so as not to wash the soil off the seeds. Place the pan in a heat of 60°, and as soon as the seedlings are an inch or two high, place the pan on a shelf in the greenhouse. Pot them off when a little hardened, shade for a few days, and then expose them fully, and repot as they require it.

By Cuttings.—When propagated by cuttings these plants flower sooner than by seed. Choose a nice, clean pot, with bell-glass to fit; fill it half full of drainage, then to within an inch of the top with the compost, and that inch with clear, bright, silver-sand. Take off the cuttings, as many as may be required; make them an inch long, and trim off the lower leaves. The young tops of the side-shoots form the best cuttings. Water the sand to make it firm, and then insert the cuttings neatly in rows across the pot within the bell-glass. Give another gentle watering to settle the sand close to each cutting, fix on the glass, and place them on a cool shelf in the greenhouse for a month, then lift one up, and if the bottom is healed over, place the pot in a gentle heat to cause the emission of roots. As soon as a fair quantity is made to each cutting, pot them off into a thumb-pot, shade for a week or two, and then put them on a shelf near the glass, and treat them the spring following as established plants. T. APPLEBY.

THE SEASON, AND THE SOWING OF SEEDS.

AFTER a period of very severe weather, we may, perhaps, be favoured with a dry spring, or, at least, as much dry weather as is necessary to enable the customary work of spring to be got on with; the most important of out-door operations being the sowing of seeds; but before entering on that duty, let us take a retrospective view of the past, and see in what condition the ground has been left by the late frost; and by way of making my meaning clear, I will give some particulars of the winter, as felt at the place I write from, about thirty-five miles from the sea.

In the first place, I may say, that winter, in a certain sense, set in rather early, for we had a fall of snow on the 27th of November, which continued on the ground two days or more. Subsequently, however, it became unusually mild, and continued so until the middle of January; some of the nights about the new year ranging as high as 44°; but it became much colder towards the middle of the month, a heavy fall of snow taking place on the 17th, which afterwards drifted into such heaps that a part of it remains on the ground yet, and will most likely do so until the middle of March. But other accumulations of snow followed, not certainly so heavy as has been seen in some years, but so much drifted, hat the south and eastern sides of hedges, and other

places, were loaded with this beautiful element, assuming, in many instances, a highly ornamental aspect. I need say that frost accompanied it; but what is somewhat singular, its intensity has varied very considerably in districts only a few miles apart, in some instances, as much as 10° in four miles. The lowest point we had was 6°, on the 10th of February, at no other night was it under 12°; but it was somewhat remarkable, that from the 9th of January to the 26th of February inclusive, the thermometer always registered more or less of frost, while the lengthened severity of it at the beginning and up to the middle of February has told with a vengeance on many things that usually escape: the ice on ponds being upwards of ten inches thick, and the wasting of the snow, except where drifted to, exposed the surface of the ground to it likewise; but I do not apprehend any more harm than we now and then meet with in a severe winter. The air was very dry the greater part of the time; so much so, that even wet clothes were speedily dried with it; and though the foliage of evergreens looked very bad, I am in hopes that all will escape any serious damage, except those which are scarcely considered hardy; but smaller things in the flower-gardening way, which now and then escape in the mild winters, have been all killed; and I fear some of the half-hardy shrubs and Pines are injured; however, we shall see better by and by. The tender *Roses* have suffered very much, I see; and in the kitchen-garden, Brocoli has been cut up very severely, the tall kinds especially; while Lettuce, Celery, Turnips, and other things, are all more or less hurt; Peas being, perhaps, least injured of anything; owing to the cold weather at the end of November, they did not make their appearance in time to get an undue length before the main winter set in, consequently, they look as well as usual, being, at the time I write, the 1st of March, not more than an inch or so above ground. But it is to the vacant ground that we must now direct our attention, the frost having benefited that to an extent far beyond that of a dressing of manure, and where the ground was turned up in time in the autumn, the top part must be as fine as could be wished for any purpose, and fit to receive the various seeds which it is now time to sow, and which we shall enumerate below.

SOWING.

Brussels Sprouts, Savoy, and the whole section of winter greens, of which *Chou de Milan, Scotch Kale*, and some others, may be mentioned as the most useful; but as they all require treatment alike, a series of beds may be prepared on a good, sunny border, and each kind sown in proportion to the wants or tastes of the family. In a usual way, it will be found good practice to sow, or rather plant, more Brussels Sprouts than anything else; because, they being in use a longer period than any other, and suffering less from severe weather, are more worthy of attention than anything else. They may be all sown in broadcast beds, and labelled accordingly, covering the seed lightly, and not raking the top much, if it is on heavy, stiff ground, as heavy rains cake it so much.

Celery for the main crop may also be sown now. This ought to be done on a spent hotbed, or some other sheltered place, and on very fine soil, as the seed is small, and, like most of its family, remains in the ground a long time before it germinates. It is needless mentioning kinds; but I may observe, that *Coles's Red* and the old *Silver White* are the best kinds I have grown; the last-named having passed under several names. But it is well to sow more varieties than two, unless they can be depended upon with a certainty, for it sometimes happens that a kind strongly recommended turns out a very indifferent article, even when the vendor had every reason

to believe it good, there being something capricious in Celery in this respect.

Parsnips ought to be sown on a piece of deep, loamy soil, that has been tilled pretty deep; drills about fifteen inches apart, drawn with the hoe, and the seed dropped thinly in will do; but as this crop is one that is expected to remain in the ground for twelve months, it ought to be sown in the open quarter; and where a due regard is being paid to the proper rotation of crops, neighbours to it might be *Red Beet* and *Carrots*, but the middle of April is soon enough for them, except for the first crop of *Carrots*, which might be sown on a south border.

Onions were mentioned in a former article, but as they may not be sown yet, I here repeat that no time must be lost. *Leeks* may also be sown to what extent they may be wanted, they being more hardy than *Onions*, and for some purposes more useful; they are, however, best transplanted out, but if that be inconvenient, let them be sown in drills, a foot or fifteen inches apart, and properly thinned in time.

Cauliflower and *Lettuce* may also be sown in beds similar to the *Brussels Sprouts*, &c. There are no distinct varieties of *Cauliflower* worth naming, only now and then seedsmen attach their name to what they profess to be improvements. *Lettuce*, however, possess a great number of kinds, and the best *White* and *Brown Cos*, with some of the *Drumhead*, and *Malta Cabbage* kinds, may be at once sown, following the sowing with others, every three weeks, or even less when the growing season arrives.

Broccoli of some of the late kinds may also be sown, especially of the very late sorts, as the *Russian*, *Miller's Dwarf*, and *Wileve*; these, being all low-growing kinds are not likely to suffer by the winter any more than if they were sown later, which is not the case with the larger sorts as *Southampton*, *Sprouting*, and others. A bed adjoining those of *Brussels Sprouts*, &c., will do for them.

Parsley may now be sown to any required extent, and if it be sown in a continuous line as a edging, be sure and thin it at the proper time. If sown as a crop, let it be in rows eighteen inches apart, and thin the plants to about nine inches from each other. Like Celery, this seed lies a long time in the ground before it germinates, but it is tolerably hardy.

Peas and *Beans*, to succeed the former crops, may also be sown now, as the *British Queen*, *Champion*, and others. *Peas*, also, that were sown in pots to plant out, may be done so now, where the autumn-sown ones do not succeed; and even where both plans are tried at the same time, the one often succeeds as well as the other; but when the autumn crop will stand there is a great saving of trouble.

Besides the above there are many little things, all of which require attention now or very shortly. A slight hotbed for *French Beans* and *Potatoes*, both of which we suppose to be preparing to plant out, by being started in some warm place. *Tomato* seed must also be sown in heat, and at the proper time potted off, while *Melon* and *Cucumber* seeds and plants must have all the requisite attention; but those requiring more than a passing notice must be deferred until next week. J. ROBSON.

THE LAST OF HIS LINE.

(Concluded from page 436.)

THE history of Sir Charles B—— is not concluded. I have not yet closed his melancholy memoir. One bright spot yet remains to be recorded, amid the gloom of his declining days, to shew yet again how pitying the Lord is; how "His compassions fail not, but are new every morning,"

even to those who know Him not, and "refuse to hear the voice of the charmer, charm he never so wisely." The Lord has, indeed, declared, "all day long I have stretched out my hand to a disobedient and gainsaying people." Alas! if it was so then, under a dark and severe dispensation, how much more so is it now, when the full blaze of light and love shines round us, and shews us the blackness of man's rebellion against his reconciled Father and merciful and gracious God.

Sir Charles B—— might be called a childless man when his daughter fled from her husband's house and heart. The stream of parental affection dried up, and left a seared channel in his breast, poor man, which could not be filled with "living water," because he knew not Him who alone can give it. He seemed to stand alone in the world, desolate and forsaken. What was his future path to he, when he rose up from the bed of sickness? Who was to be the prop and comfort of his declining age, in the dark valley through which he groped his way? What was to become of him?

Sir Charles always met with what he considered strange and romantic adventures. Seeing nothing of the Hand that orders all things, the striking manifestations of God's providence were to him romantic and incomprehensible; more like the events described in a novel, than such as took place in the common course of things.

When his partially-restored health permitted him to travel about again, he came to England, and was for some time in London. Nothing can be more dreary than a residence in London, to the lonely and friendless; and poor Sir Charles must have moved among the busy masses of that thronging city in total solitude. One day he had been standing for some moments at the window of a print-shop, when on turning to pass on, a well-dressed female laid her hand upon his arm, and looked earnestly at him, exclaiming, "Is your name B——?" The Lady was youthful and handsome, and a total stranger to Sir Charles. He endeavoured to release himself from her grasp, and proceed, but he could not shake her off. She persisted in saying, "I am sure your name is B——," and with so much serious energy, that he stopped, and answered her; "My name is B——, but I am wholly unacquainted with your face." "I am your niece," she exclaimed in tones of affecting joy. "I am the daughter of your sister Lucy, and you are my own, very uncle, Sir Charles B——. You are the image of my mother."

Sir Charles' shattered health caused this meeting to affect him deeply. He questioned, and cross-questioned the lady, until he proved her identity. She was, without a doubt, his beloved sister's child, and her glance and her features were those of his own lost Matilda—enough so to confirm her statement, and give her a place in his poor bereaved heart. The meeting of uncle and niece was a providential event to both; a wonderful instance of the mercy and watchful care of the Shepherd of Israel, "who neither slumbereth or sleepeth."

Sir Charles' sister married, and died, leaving two daughters. He knew that he had nieces *somewhere*, but having entirely lost sight of all his family, contenting himself with loving and talking perpetually about them, with the greatest apparent affection, what had become of them, or whether they were still alive, he knew not. The two daughters were left in distressed circumstances by the death of their parents. The eldest married some one in humble life, and kept a little school; the younger sister lived with her, and assisted her. She was herself greatly straitened at this particular time, and it was the good and gracious will of an ever-watchful God, that one who wanted means, and another who wanted consolation, should meet for mutual benefit in this unexpected way.

The delight of Sir Charles was almost overwhelming. He had found a second daughter, and one whom he could trust and take comfort in, as well as love; and she fulfilled her duty strictly. Miss Grey was lively, enthusiastic, animated, and warm-hearted. She nursed and attended her uncle with unwearied devotion, and in return, he made over to her all he possessed in the world, which would be riches to a penniless orphan. They travelled about together, and she watched him as she would an infant, anticipating every wish, and living, it might be said, only for him. What a striking interposition of the Lord's Hand was this!

Sir Charles, a very excitable man always, became more shaken and weakened, even by the happiness he now enjoyed, in having a home and a daughter. He resolved to go and settle in one of the Channel Islands, a place he liked, where he was unknown, and could enjoy the luxuries of life at a very cheap rate. He would there be quiet and comfortable, and his niece would possess many little advantages not attainable at cheap places of residence in England.

Sir Charles did not long possess earthly treasures. His health rapidly gave way, and his last request was fulfilled by his mourning relative. She closed his eyes, and laid beside him in the coffin the blood-stained waistcoat of his elder brother, which he had retained with melancholy affection through his eventful life. In one of those bright and beautiful gems of the sea lay the remains of the last of his line, unnoticed and unknown, except, perhaps, by one heart, that clung so fondly to him, and did a daughter's part by him in his declining age.

That niece has since disappeared from the view of those who felt a strong interest in her dutiful conduct and wished to know more of her. She has, however, been placed above want completely by her uncle's will; and the happiness of shedding the last ray of sunshine on his heart will ever be her own.

A few years after this event, the following paragraph appeared in a London paper;—"Died in London, Matilda, wife of Mr. John Watson, and only child of the late Sir Charles B—."

Readers! thus concludes a true story. The names are fictitious; but the circumstances are strictly correct. It speaks so loudly, that I need scarcely add my feeble voice to its deep tones. "Woe unto him that striveth with his Maker." The potsherds of the earth may strive together, but they cannot prevail against Him that fashioneth them.

The name and lineage of B—, once so high and honourable, is clean put out, and no honour rests upon its memory. *This* would be nothing, if we could feel a sure hope that all beyond the bounds of Time was well; but as man can only judge of a tree by the fruit it bears, we can only lay our hand upon our mouth, and "call upon the Lord, while He is near."

A VISIT TO FOULNESS ISLAND.

It was one fine morning in autumn, four or five years since, that I found myself early, in company with a friend, on the Southminster side of Cricksey Ferry, in Essex. The ferry at the crossing is about one-fifth-of-a-mile broad; and after shouting for some time, two stalwart watermen made their appearance on the opposite bank, and were soon across with the ferry-boat. To get a spirited horse into this boat, and to keep him there, was both difficult and dangerous; he had to be blindfolded, and the lurching of the vessel and the flapping of the sails threw him into a perspiration of terror; the landing was little better. A further drive of about four miles brought us to Paglesham, where we left our gig, and through the kind assistance of a farmer, who lent us his boat and fisherman, we again embarked on another river. These rivers abound with oyster-beds, which mostly belong to the farmers whose lands lie upon their banks: they range on each side of the channel, and their boundaries are indicated by upright poles, the channel being left open for the free passage of the vessels. The small, plump, rich oysters so celebrated as "Purfleets and Colchester natives" are procured in these rivers. Much trouble and expence is incurred in preserving them, and our boatman informed us that it cost his employer £100 a year to guard them from depredation, independent of other expences. Large square pits, about two feet deep, are dug along the upper margin of the tideway, in which such of the oysters as are dredged up, and not immediately wanted, are deposited for future use. Oysters spawn in the months of May, June, and July, when they are unfit for the table, and are in season during those months which have the letter *r* in them. This spawn resembles a spot of candle-grease—is about the size of a shilling, and settles down upon the tops of stones and other substances, and hardens into shell in

about twenty-four hours, when it is called "*Spat*." An oyster is considered not to be fully grown until it has attained the age of two-and-a-half or three years. Large quantities, during the dredging season, are sent to London and Holland.

After an hour's sail down the river, we landed at a small cottage on Foulness Island, the largest of a group of several lying at the mouth of the Thames, and facing the German Ocean; it has not a single tree upon it so large as my arm, at least had not when I was there, nor a stone that I could find the bigness of a walnut. The soil is composed of drifted earth and sea sand, forming an alluvial deposit; there are no roads, nor materials to make or mend them with; but tracks lead to the different farms, often knee-deep in mud. The house we were in search of stood prominent before us, about one-third-of-a-mile distant, and on our starting on foot to reach it, we were told that for strangers it would be nearly impracticable; accordingly, we took a guide, and his devious windings out of one marsh and through another, proved the value of his assistance. These marshes resemble the squares on a chess-board, and are divided from each other by wide ditches, or canals, which drain the water to a lower level, and it is afterwards let out at ebb-tide through a sluice-gate made in the seawall. Apropos of these water courses,—in England we call them *dykes*; but in France and Holland *dykes* are raised embankments—a query for etymologists. On reaching the farm-house, we met the owner at his door; he had been watching our progress through the mud, and gave us a hearty welcome; he was one of those jolly, hospitable, hard-featured Islanders, who so well represent their climate and calling; requesting us to walk in, I looked for a scraper; "We have none," he remarked, at the same time laying hold of a piece of broken rail which stood against the wall, he scraped the sides of his boots upon it, and then wiped them upon a wisp of straw; we did the same, and entered his parlour, or rather "keeping-room." This contained a curious medley of contrarieties; good and showy articles of furniture mixed with homely ones; two large dogs lay on the hearth-rug, and over the mantelpiece an apparatus, resembling a hurdle cut lengthwise, was suspended from the ceiling, to hold the powder-flask, ferret-bag, pipes, and nobody knows what. Whilst eyeing these novelties, his wife made her appearance; a good-natured, smiling, and fitting helpmate, and counterpart to her husband. It was soon arranged that we should stay to dinner; and as an hour-and-a-half would elapse before this could be ready, a lunch consisting of a ham, home-baked loaf, cheese, ale, brandy, hollands, &c., were soon spread before us. "Hollands!" said my friend, taking up the bottle; "What full proof?" "Try it," rejoined the farmer; "real Schiedam." It is needless to remark that there is no custom-house upon the Island.

Our repast finished, we went out to look at the homestead. A margin of concrete, formed of cinder ashes and oyster-shells, surrounded the cottage, itself not worth five pounds a year, and beyond this nothing but black mud, interminable mud; but the fertility of the mud is the wealth of the crops. There was neither garden nor fences, save what of the latter enclosed the farm-yard; this we entered, when fifty fine bullocks (highlanders), up to their bellies in straw, caught my attention. Evincing some surprise at their appearance, "I have five hundred more," said the farmer, "on that island yonder;" pointing to Wallasea. It was evident that something was to be learned. Passing on to the stack-yard, which contained several stacks, I went up to a large one and examined it. "Why this is not wheat," said I. "No," replied the farmer, "it is canary-seed." "What may be its value?" "About £500; and that one," pointing to the next, but smaller, "£500." I soon found that the produce of the farm consisted not only of wheat, but canary-seed, hemp, mustard, carraway, coriander, and other seeds, all valuable and important crops. In fine, our friend, who, by his garb, might have been taken for one of his workmen, cultivated 4000 acres; a tract less easy than profitable to walk over, since the best manure for the farm is the dust of the master's feet.

Leaving the stack-yard, we came out upon the plateau, or table-land, upon which the homestead is situated. A wide expanse was before us, bleak and bald; a farm-house here and there, a few ploughs at work, several contiguous islands, and the distant ocean, with the white sails of vessels, and

an occasional steamer upon its surface. Nothing broke the solitude, save the wild cries of the sea-birds, the bark of a dog, and the lowing of the cattle. The fields are divided by a broad margin of turf, and the soil is neither bog earth nor vegetable mould; but a black silt, resembling the soil of Holland, in which our Dutch flower-bulbs are grown. In many places I could pass my walking-stick down to the handle. The ploughmen appeared to have been tempted to their work more by the fineness of the day than by the fitness of the soil; for a previous shower had rendered it tenacious, and it drove down before the breast of the plough, instead of lying in ridges. Who knows, but that one day a railroad to this Island may convert it into a nursery ground for the supply of fruit and vegetables to Covent Garden; an outside petal to the "rose." At present, the produce finds its way to London principally by barges, land conveyances being both difficult and dangerous.

Flocks of sea-gulls attend upon the ploughs, and cheer the labourer in his work; their white and silvery-grey plumage contrasting strongly with the newly-turned up black soil; those lagging behind to secure some favourite morsel will again fly forward and dive into the centre of their companions; when startled, the flock rises with a blaze, makes a short circuit, and then settles as before. They are a great boon to the farmers, devouring quantities of grubs, insects, and their larva. These birds are half domesticated; tame enough to feel at home, yet wild enough to fly sometimes quite away.

Crops ripen earlier here than upon the mainland; and it is customary for gangs of labourers, from the higher parts of Essex, to take their first harvest here, and return to their second at home. Irishmen, also, find their way to the island, and make not only a second harvest, but finish with hop-picking in Kent: they then usually entrust their gains to one or two of their companions, and the remainder will either beg their way back under false pretences, or else procure passes at the parish expense. Fraud is an oblique movement, discreditable alike to industry and frugality.

Of late years, Artesian wells have been introduced with success, good water being very scarce. From the depth of 400 feet, blue clay comes up, incorporated with rooted fibres and vegetable substances. These subterranean revelations throw a light back upon the past, and forward upon the future. It would promote science, and benefit neighbourhoods, if a long glass tube was filled consecutively with a specimen of each stratum, and be still better if the thickness of each was recorded. Draw-wells should have a bucket holding two pailfuls (the usual quantity required), with a valve at the bottom, to open and fill itself, and to rise and fall with a spring, after the manner of a carriage-blind, and such as are now adopted in some coal-pits.

There is a drear, wild charm belonging to this island; its silence and solitude; its inhabitants and sea-birds; its slow, but progressive improvements; its contiguous delta of marshes and rivers, with their tides and currents; one wants to bring the whole away with one, like a huge fossil, to examine it at home and at leisure. A person may seat himself upon the sea-wall, to the foot of which the tide flows, and as it ebbs, watch the aquatic birds as they arrive in flocks, and settle upon the sands at his feet to pick up the small marine fry left by the retiring waves. Every twelve hours their table is spread, and fresh provision supplied to them by the hand of Nature; an evidence of the Divine protection and love. Birds have been poetically called "flowers with wings;" this would convert a sand-bank, dotted over with them, in their varied plumage, into a garden. An ornithologist might here get a better practical lesson on their habits than he could gather from books.

The sea on the south east embraces the island with two arms, and where these meet at the north-west, a ridge of shingle is thrown up, forming a narrow causeway, which connects it with the main land. This may be two or three miles long, and can only be traversed when the tide is low, and that by persons well acquainted with its dangers; strong winds drive up the water suddenly, and woe be to the unwary traveller who is caught midway; he would have but a small chance for escape to relate his journey. Neither precaution nor experience can always bar accidents. Our host, subsequent to our visit, was getting a drove of bullocks over to the island, when the waters rose and entangled them, twenty

were drowned, and their dead bodies, as they floated about, were hauled ashore by boatmen on the following day.

The inhabitants are, for the most part, a sturdy and amphibious race; and as much at ease in the management of a boat as in guiding the plough. They appear less indebted for their happiness to intellectual than physical enjoyments. Their cup may be full, but its capacity is not large, and its contents are neither varied nor refined. Of what we are ignorant, we do not desire; but knowledge, and not ignorance, is the principle of good.

We returned to the cottage with appetites not destined to be disappointed, for a repast was provided so ample, that one might on the following day, without much inconvenience, have dined on the savoury remnants of it. A long and social chat with our host finished the evening, and an hour's sail brought us to Paglesham, from whence we reached Rochford to lodge.—S. P., *Rushmere*.

ANOTHER MODE OF HEATING AN AMATEUR'S HOTHOUSE.

ABOUT two years ago, I became a subscriber to your very useful weekly publication, and from the very precise mode in which the treatment of the various plants are conveyed, I became more and more anxious to try my hand in following out your directions, but my great drawback was the want of a hothouse. I resolved to supply this want, and after enquiries, as to price, &c., I then resolved to set to work myself. I have the mornings and the evenings unoccupied in my business, and during two or three of the last summer months I thus had time to complete my small house. I was never a day in a wright's shop, or in any mechanical shop, yet I neither applied to nor had the assistance of anyone, except nearly two days of a mason, building in the furnace and the small brick-wall to place the glass frames in. I went to the saw-mills, ordered my wood to be cut. I ordered the glass, purchased a few tools, and then went to work, as carpenter and glazier, and without boasting of my work, I made a very neat and strong house of it. It is ten feet long, seven feet wide, and five feet high at the sides, with span-roof above. Should any of your correspondents wish for information as to how I proceeded, or as to the cost, &c., I shall be very glad to write again. I may mention, that I am only a tenant, and I so planned my structure, as that I would *easily remove every bit of it*, and, hence, my device of the heating apparatus. I heat by a small furnace placed at the north-west corner (outside) by a pipe going round the inside, and through the roof at the north-east corner. I got at the foundry two small furnace-doors, one to go above the fire-brander, the other below it; and from the winter's experience, I find that the two are of the utmost importance, as by opening, shutting, or keeping ajar, I could regulate my fire to a nicety. Then, the first turn of the pipe was built to the back of the brander, and so round, as above. The pipe is six inches diameter inside, about one inch thick, and glazed inside. It is the pipe used for conveying water. Each piece is about a yard long, with a turned-out socket at one end, for allowing the other end to slip in for two or three inches, the open cavity is filled with thimble mason's mortar, to prevent the smoke getting out. The corners are turned like the *half* of the letter S, thus **C**. I, of course, required four of these turned corners; and two of the ordinary pipes, placed upright, on the north-east corner turn, go up through the span-roof. These pipes are very strong, and one great advantage is, that the house can be heated in less than TEN MINUTES from the time of putting on the fire. Not the smallest particle of smoke escapes in the inside. The expense of these pipes was 1s. 9d. each; the corner ones 2s. 3d. each. I paid for the whole needed, £1 1s. 3d. The turn nearest the furnace I have covered with sand, so as to form a forcing-bed.

In conclusion, and for the encouragement of amateurs, I have to assure them that such a house requires very little trouble. My fire was scarcely out all the six weeks of frost; and although my house was completely filled with *Pelargoniums*, *Fuchsias*, &c., with scarcely a foot walk up it, yet I have not lost above three or four young *Fuchsias* during

the whole winter, not one *Pelargonium*, although I have 150. But still farther, although it may scarcely be believed, I, nevertheless, conscientiously tell you, that the *whole* expense of coal, &c., for fires, has not cost for the winter above half-a-crown. Excepting a small bit of wood, now and then, along with a few small bits of coal, I always used small dross coal, taken out very wet. If not used wet they will put out the fire.

I could write a good many small hints as to these small hothouses, but, I doubt not, you will think I have already exceeded my bounds. I hope the foregoing may spur up some flower-loving amateur to get the advantage of a small house to protect his pets in.—A. G., *Edinburgh*.

P.S.—As some parties may be surprised at my statement of burning a fire for six weeks for about 2s. 6d., I may explain, that before winter I got a cart-load of dross coal at 7s. 6d., and I am sure I have not used the *fourth* part of them, the difference being made up of the small bits of wood, and the few larger pieces of coal, to set the fire agoing. These pipes are very easily heated. I generally had the heat about 40°, and I *never* found my house below 30°.

[Although you have acted contrary to the orders given in the correspondent's column repeatedly, we suppose we must forgive you, and express our thanks for your interesting communication. We have recommended two or three friends to try these strong glazed pipes in their small houses, but we are not aware that it has ever been done before you have so applied them. The great fear was, that the heat would be too strong where the fire first proceeded from the fire-bars or brander, and so crack them; but there seems to have been nothing of the kind in your case. For a greenhouse, where sudden, rather than continuous, heats are required, these pipes seem to be useful, and more especially, as in the case of a tenant, they are so moveable. We do not, however, pronounce on this case, but advise all persons so circumstanced, before building, to have a friendly understanding, and in writing, with their landlord. With the exception of the moveability, we do not think there would be much in favour of the pipes over the narrow flues, sunk below the floor, recommended some time ago. But then, they would not heat quite so soon as these hard pipes; but they were altogether out of the way. We quite believe all you say about the fuel, though a little doubtful as to the cost. We should like to know if you put on the little bits of wood, and the little bits of coal, *always* yourself; because if not, and we speak feelingly, others might not be so particular with the little bits of coal, and the dross might in some cases be used as a blind. The weather has been so severe, that a quarter of a load of dross would scarcely be sufficient. Much, however, would be gained by keeping it constantly wet before using it, after the fire was lighted. I have much trouble with this very matter, and frequently go to a furnace and find the rubbish used for fuel dust dried, and in that state there is no possibility of igniting it.

Some time ago, there was an account in these pages of a five pounds greenhouse; but made, as in your case, by the owner. You seem to have managed the whole affair in such a business-like manner, that we would be obliged for a fuller account, for the benefit of our readers: such as the mode of glazing the sides, if glazed; the height of the apex of the roof; the size of the timber, wall plates, sash bars, &c., employed; the price it stood, when cut, per foot; the weight and size of squares of glass; the mode of glazing; the mode of giving air; the convenience for displaying plants inside; stages, or what; the expense of the whole of the materials; the rough estimate of the hours' labour the house cost you; though the latter is of less consequence to many Amateurs; because many might find a little time, and yet might not find money so easily in these tax-time days.

We feel sure that a few remarks on these subjects, as well as any other hints, would be serviceable; and so thoroughly are we convinced of the benefit which amateurs may do, not only to each other, but to more professional practitioners, that if ever we have an hour to spend in Auld Reekie—and especially in a keen, frosty morning—we shall do ourselves the pleasure of having a Paul Pry peep at this neat little house that has been indebted neither to carpenter nor glazier.]

AN ALLOTMENT, WITH ITS SPRING AND SUMMER CROPS.

BREADTH 27½ yards, length 44 yards (viz., one rood, or quarter-of-an-acre of ground).

FIRST DIVISION.

		Feet.
March 1st	22 rows of Potatoes, two feet between rows.	
Plant directly....	Sets, one foot apart in planting ..	44
	York Regents, Martyn's Seedlings, or Otway's Kidney, and the <i>Fortyfold</i> , if on good ground.	
Alley		1

SECOND DIVISION.

Middle of May ..	Two rows of Swedes	3
	Alley	1
Sow directly	Four rows of hollow-crowned Parsnips	7
	Alley	1
Middle of April..	Four rows of long red Altringham Carrots	6
	Alley	1
1st week in May .	Row of Scarlet Runners	3
	Alley	1
Sow directly	Six rows of Onions, Globe, or James's Keeping.....	5
	Alley	1
Beginning of May	Four rows of lato hardy Turnips ..	8
	Alley	1
End of March ..	Row of late Windsor Beaus	3
	Alley	2

THIRD DIVISION.

Plant directly ..	Two rows of Ash-leaved Kidney Potatoes	3
	Alley	1
Plant directly ..	Three rows of Matchless Cabbage ..	5
	Alley	1
End of March ..	Row of Marrowfat Peas (Thurston's Reliance)	3
	Alley	1
Plant directly ..	Three rows of Ash-leaved Kidneys (Capo Broccoli after)	4
	Alley	1
Sow directly	Row of early Long-pod Beans	3
	Alley	1
Plant directly ..	Six rows of Ash-leaved Kidneys (Celery after)	9
	Alley	1
Sow directly	Row of early Warwick Peas (Celery after)	3
	Alley	1
End of March ..	Row of Cauliflower (Stone Turnips after)	3
	Alley	1
Plant directly....	Two rows of Lettuce (autumn Cabbage after)	2
	Alley	1

FIRST DIVISION.—POTATOES.—N.B. The winter and spring Broccoli, and the winter Cabbage and Spinach, take this division directly the Potatoes are off, and to become occupied with the *mixed* crop next spring.

SECOND DIVISION.—ROOT CROPS.—N.B. This division to be trenched for the main crop of *Potatoes* next year, directly the roots are off.

THIRD DIVISION.—MIXED OR EARLY CROP.—N.B. This division to be occupied with flying crops, such as Lettuce, &c., in the autumn, and to be sown with the *root* crops next spring.

TEMPERATURES OF JANUARY & FEBRUARY.

REGISTER of temperature at *Rolleston Hall, near Burton-on-Trent*. The thermometer at the height of two feet above the soil, and distant from any wall, in the garden of Sir Oswald Mosley, Bart., from the observations of Mr. Atkinson, his gardener, 1855.

ROLLESTON HALL.					NUNAPPLETON.		
D of M	JANUARY.		FEBRUARY.		JANUARY.	FEB.	D of M
	6 A.M.	NOON.	6 A.M.	NOON.	Minim.	Minim.	
1	35°	50°	24°	32°	43°	28°	1
2	38	46	19	32	34	20	2
3	40	45	25	32	37	28	3
4	27	46	28	33	35	30	4
5	38	52	25	35	41	32	5
6	41	54	28	33	39	31	6
7	36	54	25	34	38	21	7
8	40	50	19	30	44	25	8
9	38	42	18	28	43	27	9
10	20	34	7	28	22	26	10
11	30	44	5	28	28	12	11
12	22	38	20	32	26	14	12
13	30	40	11	27	28	15	13
14	32	38	10	28	32	15	14
15	16	32	9	30	26	12	15
16	27	32	9	25	31	0	16
17	20	32	8	25	22	8	17
18	19	35	0	28	25	0	18
19	25	34	8	32	30	10	19
20	15	32	21	30	23	25	20
21	25	32	19	32	28	20	21
22	23	34	20	35	30	6	22
23	24	28	22	34	22	19	23
24	25	35	16	40	28	15	24
25	28	35	30	38	30	31	25
26	26	35	30	37	30	32	26
27	25	34	28	38	21	30	27
28	25	35	33	41	30	32	28
29	23	34			18		29
30	20	30			23		30
31	20	25			25		31

"The above is a copy of the register kept here (at Nun-appleton), from January 1st to February 28th, inclusive. The situation is low, not being more than ten feet above high tide mark. The minimum on the 16th was from 6 to 7.30, A.M.

"On the night of the 17th, the thermometer fell very rapidly, till 2 A.M., when it reached zero. Shortly after it became overcast, the temperature rose as rapidly as it had fallen, till at 8 A.M. it had reached 22°.

"A fine plant of *Cedrus Deodora* is uninjured (this is a little elevated, and on a rather dry bottom). Another, two miles from here, on a cold and wet subsoil, is completely browned. *Berberis aquifolia* and *Common Laurel* much injured. *Cryptomeria japonica*, a little hurt, but I think not seriously.—ISAAC RANSOM, *Nunappleton, eight miles from York.*"

CULTURE OF GLORIOSA SUPERBA.

THIS genus is limited in the number of truly valuable plants, which may justly be termed indispensable to ever so restricted a collection. But we sometimes hear expressions of regret, that the glorious order of vegetable forms, among which our present genus ranks, is not more accommodating in its habits, so as to enable a greater number of admirers to enjoy its floral merits. True it is, that a great proportion of the species of this genus are, undoubtedly, worthless; still, the species under consideration belongs, as it were, to the aristocracy of the vegetable kingdom, but requires a

peculiar treatment, insisting on a highly moist atmosphere, and is marked by other peculiar characteristics, which separate this genus from the general mass of flowering, ornamental plants, as much in management as in appearance. Again, there is a portion of plants, and, very fortunately, not inconsiderable, respecting either number or beauty, which comes much nearer the denomination of every one's plants.

At the head of this genus stands the beautiful *Gloriosa superba*, which, in a state of nature, flourishes in the damp ditches of the East Indies, climbing and rambling among the dead and living trunks of trees, where it grows luxuriantly, flowers, and sinks into rest with the alternations of the seasons, sometimes subjected to the saturating influence of long continual rains, at others dried up by parching, hot winds, and the scorching effects of a clear, light, and bright sun. It was originally introduced in 1690, but remained a plant almost forsaken and forgotten till within a few years back, when its beautiful inflorescence rewarded the skill of some enterprising cultivator. Its root strongly resembles a kidney Potato, having a pale brown skin, with numerous eyes collected at one end, to which it is necessary to pay especial attention, for should the incipient buds be injured, the ball has no power of developing adventitious buds; consequently, in the event of this portion being injured, the loss of the bulb is almost certain. From the eyes previously mentioned, the stem issues, and is of a trailing, scandent habit, bearing leaves at intervals of five to six, of a pale green, lanceolate in shape, furnished at the apex with a tendriled point, by which the plant attaches itself, and clings to surrounding objects with the utmost tenacity. When the shoots have advanced from four to five feet in length from the axils of the leaves, it forms lateral branches, varying from six to ten in number. From the branchlets the flowers are produced, which, when expanded, are truly gorgeous in appearance. Like most tropical plants, it requires a marked season of growth and rest. A continuance of one undeviating course of treatment would early hasten its entire dissolution.

To take the plant at this early season, the bulbs are sufficiently excited as to require potting. The soil composed of a mixture of one-quarter good staple loam dug from a rich old pasture, one-quarter leaf-mould, the remainder of good turfy peat, and fine, sharp silver sand, mixing and turning it well together, and used in as rough a state as possible. The pots should be well drained, and filled to within four inches, when the bulbs may be laid in regularly, allowing each two inches every way. The pot may then be filled, and plunged into a bottom-heat ranging from 80° to 85°, Fahrenheit, withholding water, except a sprinkling from a fine waterpot, till the shoots are visible, then the temperature may be increased from 90° to 95°, or 100°, with sun heat. The shoots should be allowed to ramble at pleasure, until they show indications of flowering, when they may be trained to any shape desirable.

At this period, the same temperature should be maintained, and a weak solution of liquid-manure copiously applied, till the flowers are fully expanded, when water should be administered with care, and the plant hardened to the cool greenhouse or conservatory, till its flowering season is completed, when water must be very sparingly given, limiting the quantity according to the degree of decay.

When the decay is completed, the old stems should be cut down to the soil, and a large pan turned over the pot, excluding all moisture from the bulbs. The pots then should be stored away in a dry and cool place, till the following season, when the bulbs should be turned out and examined; removing all decayed portions, avoiding all attempts at separating any bulbs, except those whose juncture is imperfect, or when it can be done without causing a wound, for although it is the ordinary mode of propagation, still, a great loss and want of strength is attributed to this method, for often bulbs, when separated, whether by force or knife, rapidly decay, as the primary eyes alone are capable of developing a shoot, although numerous indications may be quite perceptible upon the bulb; yet these organs are incapable, as before stated, of producing and bringing into existence their adventitious buds.—J. R. T., *Sutton.*

EFFECTS OF THE WINTER.

A CORRESPONDENT at Mounts Bay, Cornwall, whose garden has a south aspect, and is half a mile from the sea, sends us the following list:—

Foliage more or less injured where much exposed to the wind, but not otherwise.—Common Bay, *Pinus excelsa*, *Cupressus funebris*, Common Laurestinus, *Benthamia fragifera*, *Veronica speciosa*, *Andersonii*, and *Lindleyana*, Myrtle, and *Taxodium sempervirens*, which last has eminently belied its name, being perfectly brown, and the extremities of last year's shoots have perished.

Uninjured—*Pinus Hartwegii*, *Insignis*, *Cephalonica*, *Gerardiana*, *Pinsapo*, *Araucaria Braziliensis*, *Cryptomeria Japonica*, *Libocedrus Chilensis*, and *Camellia Japonica*. The young shoot of the *Hydrangea* does not appear to have suffered. *Dielytra spectabilis* is pushing rapidly.

Geraniums, *Calceolarias*, and *Verbenas* that had survived previous winters have perished.

The common Evergreens and Pines not mentioned exhibit no trace of the frost in their present appearance.

QUERIES AND ANSWERS.

GARDENING.

RURAL CUSTOMS IN CORNWALL AND AMERICA.

"Can you, or any of your readers, inform me whether the following customs, mentioned by Colonel Landmann, in his 'Adventures and Recollections,' are still practised?—INQUIRER."

"My last visit to Helston was on Flora-day, the 8th of May (1797). At the time of which I am writing, this was one of the gayest and most interesting festivals of olden times.

"At an early hour of the afternoon lads in their best attire, with their full dressed belles, having real flowers in their hair, and carrying large bouquets of wild flowers, began to arrive from the surrounding country; their appearance in the town served as a signal for the residents to sallies forth, and join in the promenading about the principal streets. Presently the music, consisting of a drum and fife only, was heard calling those who were willing to dance, to assemble in the market-place, whence they quickly advanced in couples dancing through the streets to a particular tune played on the fife and drum. At certain corners of the streets or other fixed places, they all stopped and faced each other in country dance order, when the leading couple danced down to the bottom; they then proceeded as before in couples to the next halting place, upon which the couple at the head began to dance down as the first had done, and the whole again progressed to the next corner. In this manner the procession went on until every couple had had its turn: those joining the dance on the way after leaving the market-place, no matter who they were, went to the bottom of the couples that had not danced down.

"In this the higher classes joined without reserve or distinction, all mixing in perfect equality; and the party I was with, which had required several carriages to bring them from Falmouth, shared in this truly innocent and joyous amusement. We had dined at one of the hotels, and by five o'clock turned out to join the dancers in the streets. At about seven o'clock, long before the sun had disappeared, all those usually admitted to the subscription balls retired to the assembly-room, and kept it up until twelve, when the whole dispersed. * * * *

"The season in Canada had now arrived for gathering the Indian corn, of which a great quantity was produced in the neighbourhood at our camp; and it was the practice with the farmers to assemble a corn-bee—that is, to invite all the young girls and young men of the adjacent farms to meet in the great barn where the corn, roughly torn from the stalks, had been deposited, in order to strip the ears of the leaves. As an inducement or reward for that work, every young man who found a red ear of corn was licensed to select one of the girls and kiss her, whilst he held the red ear over her head. The fortunate youth was then

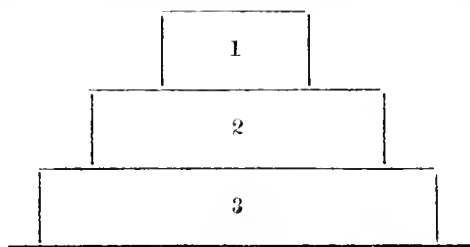
required to throw the red ear on the heap of picked ears, at the further end of the barn. It, however, not unfrequently happened that the red ear found its way into the pocket, and a white ear of corn was thrown on the heap; and it is probably needless to explain that the red ear was reproduced as often as a red ear was desired—a fraud which the girls were not over zealous to detect.

"To these parties Johnson and myself were invariably invited, and we soon arrived at the art of finding a red ear of Indian corn as often, if not oftener, than the oldest and most expert peeler of Indian corn-leaves. I do not remember if the ladies had any peculiar privilege allotted them, when they had the fortune of finding a red ear; but I think I perceived one of them pass a red ear into the hand of a favourite, upon which he immediately claimed the exercise of the privilege it conferred."

[Any one who can give us the information sought for by "Inquirer" will oblige us by communicating.]

FLOWERS FOR CIRCULAR-TERRACED BEDS.

"Please inform me, in your next number, the names of some two or three flowers that will cover a bed of this shape in the spring, before I plant out Scarlet Geraniums, &c.



"*Blue Nemophila*, I thought, would suit for one. (This, and *N. maculata*, are the best for you.) *Erinus alpinus*, another purple; and I want a yellow for the middle. (*Alyssum saxatile* is the best.)

"Will the *Nemophila insignis* flower soon enough? If not, please tell me what will suit the bed. I have applied to a great many gardeners for some seed of the *Erinus hispanicus*, without success. Where can it be had?—D. H., *A Subscriber*."

[It would be only leading you astray to say that there are any plants known in this country with which it is possible for you, or for any one else, to carry out the design you purpose. Go to what expense we choose, we can never depend on the flowering of spring bedding-plants, including annuals, before the middle of April, on the average of the seasons, and seldom so soon; and such beds are in their prime just when we want them for *Calceolarias*, and other summer plants. The first spring herbaceous plant which is suited for a mass is *Arabis alpina*, or *grandiflora*, by which name it is known in some of the London nurseries. It flowers for six weeks, coming in the beginning of February, in early seasons; but there is no other to match it during that period. It is a low, spreading plant, with white flowers and whitish leaves, and should be in every spring garden, but in patches only. The next plant of the herbaceous class, to flower in the spring, is *Ranunculus amplexicaulis*, which blooms, generally, three weeks after the *Arabis*, and lasts for three to four weeks; it is also a white-flowering plant, and no higher than the *Arabis*, or four inches; but the growth is very different. This, also, ought to be as common as Snowdrops; but there is not enough of it in the three kingdoms to make six respectable beds! and like the *Arabis*, it is not suited for beds, only for patches. On the average of seasons, these two are the only real herbaceous plants for the whole month of March; therefore, it is clear we cannot have beddings of herbaceous plants this month. In April we have the *Alyssum saxatile* and *variegata*, with bright yellow flowers, which bed or mass much better than any of the *Calceolarias*. This is the best yellow plant for you. *Doronicum Austriacum* is another yellow bedder in the spring, from the middle of April, but has a very common look, being a low, spreading plant, with abundance of common, yellow composite flowers, not much better than

the flowers of the Dandelion, and not nearly so good as the flowers of *Doronicum Columnae*, which comes after it. *Phlox verna*, and *Saponaria ocyroides*, two low, spreading plants, with pink flowers, come in about the same time; but they are hardly fit for bedding, and, in a late season like this, they will not be out of blossom before it is time to plant out the Geraniums. Upon the whole, therefore, it is best to hold strictly to the mixed style of planting beds in the spring, and Mr. Appleby's lists of early-flowering plants, in our two last volumes, are the best to refer to. Otherwise, to confine yourself to autumn-sown annuals.]

IMPROVING THE GRASS OF AN OLD ORCHARD.

"I occupy an orchard of about an acre in extent. The grass, being very coarse, will keep nothing but sheep and geese, as nothing else will eat a good deal of it. It has been neglected for about twelve years, and nothing done to it in the way of manure; a small pony has been in it most of the time; but he deposited his dung in one or two places, and it was not disturbed, which is the reason of a good deal of the coarseness of the herbage.

"Last year, I gave it a dressing of stable-manure, which I threw up in heaps till rotten, and then spread it. I have been recommended to try nitrate of soda this year, and I want your opinion thereon. I do not want to have stable-manure again, as I have to draw it three miles, and it makes it very expensive.

"Which would be best,—nitrate of soda, guano, or bone-dust? Or is there any other artificial manure you would recommend in preference?

"The soil, to all appearance, is a good loam; subsoil, marl. I do not think it wants draining, as, let the weather have been what it may, it always seems dry; and although there are several hollows, there is never any water in them. Several people have remarked on the soundness of the soil, and its absence of all appearance of damp. The labourer I employed occasionally, said that it was as good or better than any in the parish, which is all good land generally.

"The only fault it seems to have, is to have been exhausted, and shaded by a lot of old Apple-trees, which had never been pruned, and grown till they had interlaced one another, in some cases; and the hedges were twelve feet high on one side and end.—A. M., *Derby*."

[We presume that the old Apple-trees have been removed; the hedges pruned; and that your object is to have good pasturage for a pony, or cow, or for both. If this be so, break up the soil at once; burn all the old surface turf, for there is no time otherwise to reduce it. Spread the ashes, adding a slight dressing of guano (about one hundred weight) and eight bushels of bone-powder. Sow the ground with Oats, and then harrow in a mixture of the following Grasses, and in the quantities named:—

- Cynosurus cristatus* (Crested Dog's Tail), 6 lbs.
- Festuca duriuscula* (Hardish Fescue), 3 lbs.
- Festuca tenuifolia* (Fine-leaved Fescue), 2 lbs.
- Lolium perenne tenue* (Fine Rye Grass), 20 lbs.
- Poa nemoralis* (Wood Meadow Grass), 1½ lbs.
- Poa nemoralis sempervirens* (Evergreen Wood Meadow Grass), 2 lbs.
- Poa trivialis* (Common Meadow Grass), 2 lbs.
- Trifolium repens* (White Clover), 7 lbs.
- Trifolium minus* (Small Yellow Clover), 2 lbs.

This mode of treatment will be much more satisfactory to you than endeavouring to improve the old herbage. If you resolve to try to do so, morely have all the old herbage mowed down close, and immediately sow over it twenty bushels of common salt.]

KOHL-RUBI, OR KNOL-KOHL.

"You would much oblige me, and I have no doubt others also, if you would give, in an early number of THE COTTAGE GARDENER, some account of, and the best mode of, cultivating the *Kohl-Rubi*, especially as to the soil and time of sowing; and your opinion of its value as a winter food for cows, &c.—T. B. NORTON."

[All the information we have we published in THE

COTTAGE GARDENER'S DICTIONARY, from which we extract the following.

"KNOL-KOHL, or KOHL-RUBI (*Brassica caulorapa*), the Turnip-stemmed Cabbage. It is sometimes called the Cape Cabbage. The stem is thick, rises about eight inches out of the ground, is swollen into a globular form, very like a large Swedish Turnip, growing above ground, and is crowned with leaves, slightly scalloped on the edges, undulated, and milky green, like those of the Turnip we have mentioned. There are several varieties of it, but the green and the purple-stemmed (especially the latter) are to be preferred.

"It is sweeter, more nutritious, and more solid than either the Cabbage or White Turnip; will produce a greater weight per acre than the Turnip, and prefers a heavier soil than that root: is hardier and keeps better than any other bulb; and imparts very little of that flavour, either to milk or butter, known as *turnipy*. So much relished is it both by cows and sheep, that they will leave either turnips or cabbages to partake of it. Hares and rabbits are so fond of it, that where they abound Knol-kohl can scarcely be grown. It is excellent when boiled for the table. Sow in the first week of March, and plant out in June in rows four feet apart, if the soil is fertile, but only three feet if the soil is less productive, and three feet from plant to plant in the rows. The plants must have the chief part of their stems left uncovered by the soil. Two pounds of seed produce enough plants for an acre. It is an excellent crop for cleaning the soil, as the width between the plants and rows enables the hoe to be efficiently used, and during a lengthened period. When blanks occur, these may be filled up from the seed-bed with fresh plants. The produce is from eighteen to twenty tons, and upwards, per acre; the bulbs may be kept sound and nutritious until very late in the spring, even much later than the Swedish Turnip."]

SANDWICH ISLANDS.

THE Anniversary of American Independence was celebrated, at Honolulu, on the 4th of July. His Majesty, Kamehameha III. (since dead) had issued a proclamation of the neutrality of the Hawaiian Kingdom, in the war now raging in Eastern Europe. A very lengthy and important report had been presented to the Annual Meeting of the Royal Hawaiian Agricultural Society. The following are a few of its most prominent features:—

"The cause of agriculture in these islands, I think, is decidedly upon the advance, and though some of us have been disappointed in our crops—though our trade with California, the great consumer of our products, has diminished—and though the small-pox has smitten thousands of our best labourers to the ground, we have great reason to rejoice in the general prosperity and abundance of the land. In several branches there has been great activity and progress, and such as cannot fail to gladden the hearts of all those who are fond of sweet flour, good mutton, and tender beef.

"WHEAT.—The rapid increase of wheat raising during the past year has been such as to mark a new era in the history of the Islands. There has been sown in the region of Makawao, East Maui, during the last year, some 1000 acres of this valuable grain, and though about 200 acres of it have been cut down by the pest, it is estimated that the remaining 1000 will yield at least 25,000 bushels of beautiful wheat, or an average of 25 bushels per acre. This, it is said, will make five thousand barrels of flour, or more than enough to supply our home consumption. It is indeed a glorious day when we can raise our own bread-stuffs, and one which will be appreciated by those who for the last quarter of a century have been compelled to eat the miserable, sour, musty stuff called flour, which has been imported round Cape Horn, and after being mixed with about an equal quantity of salerats, baked, and called bread.

"In the early days of wheat sowing, when it was raised by the peck and bushel, the lava rocks were used as a threshing machine, and the month for a fanning mill, but lo! the Yankee has come with his reaping machine, his horse power, and steam mill, and he will wake up the

slumbering soil; cause the fields to rejoice with beauty; gather in his harvest and his dimes; and give us plenty of sweet bread and to spare.

"It has been generally thought that wheat would not grow and fill well at an elevation above the sea of less than a thousand to fifteen hundred feet. This is a mistake; for Mr. Emmerson, of Waialua, has this year sown a patch not ten feet above the level of the sea, which has filled admirably. Some of it is now here for exhibition.

"CORN, BARLEY, OATS.—The corn crop in the islands is a very uncertain one, and is only remunerative in a very few locations. After being nursed through its infancy, and preserved from its great enemy the cut worm, it is subject to be blasted in a single night by a smaller but more terrible foe. This is a tiny white insect, so small as to be hardly visible, which settles on the field in a cloud, as it were, and just as the corn begins to silk, and the heart of the husbandman gladdens with hope of an abundant harvest, the green field turns brown, withers, and dies. The best corn is raised at Wailua, on this Island, and finer meal than is made of it at the new Flouring Mill was never eaten. The kind generally planted is the yellow corn of from 8 to 16 rows. Several new varieties were introduced by the Society last year, and scattered on the different Islands, but I have had no report from them.

"There is a steadily increasing demand for oats and barley for horse feed, at about a dollar and twenty-five cents per bushel, and yet there is scarcely any raised. Why is this? Both will generally do well where wheat grows, and I should think the raising of them would be profitable. At least we ought to raise enough to supply our own market. At present our oats are mostly imported from the United States, by way of filling in boxes of hardware and other goods which they do not injure. From the varieties of barley imported by the Society last year, I have not yet heard. Mr. Townsend is said to have a flourishing field of this grain growing at Makawao, on East Maui.

"SUGAR.—The growth and manufacture of sugar in this country is still in its infancy. The trials and difficulties of pioneers in this business, and remote from every means and facility for carrying it on, can never be told; but I trust the day has arrived when some, at least, of those who have persevered so manfully in rolling stones up hill will be rewarded for their labors. The last year's crop has not equalled our expectations, though it has exceeded that of the year before. We estimate the whole produce of the islands for the last season at 800 tons, which, with the syrup and molasses, is valued at 120,000 dollars. The great obstacles in the way of an increased produce of this article, I have often before remarked, are the want of capital, and the still greater and ever increasing one of labor. Each successive year reduces the number of Hawaiian labourers, and whether this diminution can be profitably supplied by the importation of Coolies is still problematical. The present crop of the Koloa plantation on Kauai, owned by Dr. R. W. Wood and Mr. Burbank, will amount to 300 tons of beautiful sugar, which, at six cents per pound, makes the handsome sum of 36,000 dollars. Its syrup and molasses I estimate at ten thousand dollars more, which shows a total of 46,000 dollars. The whole expences of the plantation per annum do not exceed, I am told, 15,000 dollars. Comment is unnecessary.

"The sugar plantations belonging to the Chinamen in the district of Hilo, Hawaii, I am sorry to say, are at a stand still. Their proprietors, so far as improvements are concerned, stand just where their ancestors stood 2000 years ago, and not a step will they advance. The largest cane I have ever seen was raised in Hilo, and a large part of the district is quite an Eden in the way of cane growing. The great objections to plantations in Hilo are the iron-bound coast, and the impossibility of building a good road to their only harbour. Still, these obstacles are not insuperable.

"Since our last meeting we have imported, through the kindness of Captain of the ship George Washington, some new seed cane direct from Tahiti, which will doubtless prove a valuable acquisition to our planters."

(To be continued.)

FLOWERS AND PERFUMERY.

SOME idea of the importance of perfumery as an article of commerce may be formed, when it is stated that one of the large perfumers of Grasse, in France, employs annually 80,000 lbs. of orange blossoms, 60,000 lbs. of cassie flowers, 54,000 lbs. of violet flowers, 20,000 lbs. of tuberoses, 16,000 lbs. of lilac flowers, besides rosemary, mint, lavender, thyme, lemon, orange, and other odorous plants, in like proportion. Flowers yield perfumes in all climates, but those growing in the warmer latitudes are, it seems, the most prolific in their odour, while those from the colder are sweetest. Though many of the finest perfumes come from the East Indies, Ceylon, Mexico, and Peru, the South of Europe is the only real garden of utility to the perfumer. Grasse and Nice are the principal seats of the art. From their geographical position, the grower, within comparatively short distances, has at command that change of climate most applicable to bring to perfection the plants required for his trade. On the sea-coast his cassie grows without fear of frost, one night of which would destroy all the plants for a season; while, nearer the Alps, his violets are found sweeter than if grown in the warmer situations where the orange-trees and mignonne bloom to perfection. England, however, can claim the superiority in the growth of lavender and peppermint; the essential oils extracted from these plants, grown at Mitcham, in Surrey, realise eight times the price in the market of those produced in France, or elsewhere, and are fully worth the difference for delicacy of odour.

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

HEATHS (A Subscriber, Norfolk).—To give you their "treatment" would occupy pages. You will find it detailed fully in our numbers—167, 168, 169, 173, 174, 178, 181, 185, and 187.

SEEDS AT A CHEAP RATE (*Temporis*).—We cannot advise you, nor do we think you more reasonable than a lady would be who went into a haberdashers and wanted to cut a little bit off everything, not considering that the tradesman must have a profit. You might write to some seedsman in our advertising columns and state your wants. He would do all he could to aid you, consistently with his own living.

ASPARAGUS POTATO (A Subscriber).—You are mistaken altogether. Mr McEwen exhibited Asparagus and Potatoes.

GRAFTING STRAWBERRIES (D. Pressley).—The writer in the *Quarterly Review*, which we extracted at page 404, made use of a wrong word, he intended to say "crossing," and that by doing so judiciously Mr. Myatt has produced improved kinds.

ARABIAN LAUGHING PIGEONS (A Constant Reader).—Our male bird is blue, with a very iridescent neck; the hen is pied-blue and white. Our correspondent wishes to know who has any to sell.

STAY-AT-HOME PIGEONS (Y. Z.).—The least wandering Pigeons we have ever kept are the Maltese Runts. They are very large, and excellent for table.

GERARDE'S HERBAL (J. C.—, A Subscriber).—You can obtain this from Mr. Petheram, Holborn, or other dealer in second-hand botanical and gardening books. It varies in price, having known it sold at from 15s to 21s. The original edition was published in 1597, but another, "enlarged and amended by Thomas Johnson," appeared in 1633. Both editions bear the same title—"The Herbal or Generall Historie of Plantes."

LONDON: Printed by HUGH BARCLAY, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published by WILLIAM SOMERVILLE ORR, of Church Hill, Walthamstow, in the County of Essex, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—March 20, 1855.

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PANSEY SEED, a few packets from selected varieties. 1s. per packet.

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COLLECTIONS OF SEEDS, for large or small Gardens, containing the new varieties of Peas and Vegetable Seeds, at £3, £2, £1, 5s., and 15s. each, and delivered free of charge within a circuit of four miles.

Splendid GERMAN STOCKS, ASTERS, BALSAMS, and other new FLOWER SEEDS, Single Packets of which may be had at 3d. to 1s. each, or in Collections to suit the wants of Purchasers, and sent free by post. Warranted of first-rate quality and true to name.

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For the high estimation in which these Seeds are held see the published opinion of Mr. Errington, Gardener, Oulton Park; and, also, the following:—

"I have grown your German Asters, Stocks, and other Seeds, and consider them equal to any that I have seen."

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"Gardener to Thos. Avison, Esq., Fulwood Park, Aigburth."

"Having for several years grown your German Seeds, I can confidently recommend them, as I have always been able to secure a very fine bloom."

"JOSEPH HANMER,

"Gardener to John Eden, Esq., Fulwood Park."

"Your German Seeds, such as Asters, Stocks, Cinerarias, Balsams, &c., that I have grown, have been of excellent quality, and are well worthy of a place in every Flower-garden."

"JOSEPH HUTCHINSON,

"Gardener to Henry Harrison, Esq., Aigburth."

"The quality of your Seeds has been such as to give me every confidence in recommending them to public notice. The German Seeds have been very fine."

"DAVID A'LOHIE,

"Gardener to George Arkle, Esq., Anfield."

JAMES TYNAN,

IMPORTERS OF GERMAN FLOWER SEEDS, 56, GREAT GEORGE-STREET, LIVERPOOL.

BASS & BROWN'S CHOICE VEGETABLE AND

FLOWER SEEDS.—For some of the novelties of the above, see Advertisement comprising the last page of THE COTTAGE GARDENER of Feb. 27th; also, CHOICE ROOTS FOR EARLY SPRING PLANTING.

Assorted Collections of VEGETABLE SEEDS,

Containing many of the finest new sorts. The sorts are given in the Catalogue.

No. 1. With 20 qts. of Peas and other Vegetables in proportion	3	0	0
No. 2. Collection with 12 qts. Peas, &c.	2	0	0
No. 3. Do. with 8½ qts. ditto, &c.	1	5	0
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FLOWER SEEDS—Best and Newest Assortments,

With printed Instructions for Sowing and Raising Seeds.

100 Vars. Choice Showy Annuals	0	15	0
50 Vars. 8s 6d	30	vars. 6s. 6d	20
20 Vars. best dwarf Annuals, in large packets, suited for filling beds on lawns, 7s 6d	12	vars.	0 5 0
20 Vars. Choice Greenhouse Annuals, 7s 6d	12	vars.	0 5 0
20 Vars. Choice Greenhouse Perennials, 10s 6d	12	vars.	0 7 6
20 Vars. Choice Hardy Biennials and Peren. 7s. 6d	12	vars.	0 5 0

For further particulars, see COTTAGE GARDENER, Feb. 27th.

Choice Imported German Seeds.

Separate Collections of Stocks, Aster, Balsam, Cockscorn, Larkspur Sweet-William, and a great variety of other Seeds.—See Seed and Plant List.

BASS AND BROWN'S PLANT LIST, for 1855. sent free by post for three penny stamps, or gratis to our customers who may not have received them.

Seed and Horticultural Establishment, Sudbury, Suffolk.

MESSRS. E. G. HENDERSON AND SON, of the

WELLINGTON NURSERY, ST. JOHN'S WOOD, LONDON, beg to inform their Patrons and the Public, that their NEW CATALOGUE OF SEEDS for 1855 is now ready, with full descriptions and other information, and will be forwarded post free on application.

E. G. H. & Son take this opportunity of stating that none but the most popular and improved kinds of Vegetable Seeds appear in their list; and among the Flower Seeds only those whose beauty and merit are universally acknowledged, together with a carefully-selected stock of the principal new varieties. For names and description, see No. 312, and page 488 of this paper.

LILLIUM GIOANTEUM, 2s 6d and 5s per packet.

HOLCUS SACCHARATUS (New Sugar Cane), 1s and 2s 6d.

DIOSCOREA BATATAS (Japanese Yam), 2s 6d each tuber.

MESSRS. E. G. HENDERSON AND SON will commence sending out plants in April next of their new Seedling Fuchsias, with white Corollas, both double and single, and others with blue, violet, and variegated Corollas. (For description and price see back number of this Journal for January 30th, 1855). A printed list will be sent free by post on application; and a coloured plate of three of the varieties will be sent free on receipt of six postage stamps.

QUEEN VICTORIA.

PRINCE ALBERT.

MRS. STORY.

RANUNCULIFLORA.

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BEAUTIFUL FLOWERS.—Twelve Packets, each

containing 100 Seeds, 1s. Sent free per post, 1s 2d. A 5s packet sent free per rail. Abronia umbellata, Eceremocarpus scaber, choice Gloxinias, Lophospermum Hendersonii, Lisianthus Russellianus, and every other choice variety, 6d per packet. Dwarf German (ten weeks) Stocks, as imported, thirty-six varieties, each variety 3d per packet.

WM. CULLINGFORD, 1, Edmund Terrace, Ball's Pond, Islington. N.B.—Elletson's superb, new, late, dwarf, White Broccoli, Emperor, Seed (these Broccoli weigh from 17 to 25 lbs. each), 2s 6d per packet.

GLASS for CONSERVATORIES.—Thos. Millington

requests attention to the present PRICES of SHEET GLASS, packed in 100 feet Boxes, Good Quality, about 15 oz. to the foot, Boxes 1s extra, but allowed for when returned.

Inches.	100 feet.	Inches.	100 ft.	Inches.	100 ft.
6 by 4	10½	10½ by 8½	15	15 by 10	
6 " 4½	11	11 " 9	15½	15½ " 10½	
6½ " 4½	11½	11½ " 9½	16	16 " 10	
6 " 5½	12	12 " 9	16½	16½ " 10½	
7 " 5	12½	12½ " 9½	17	17 " 10	
7½ " 5½	12	12 " 10	17½	17½ " 10½	
8 " 6	12½	12½ " 10½	18	18 " 11	
8½ " 6½	13	13 " 10	18½	18½ " 11½	
9 " 7	13½	13½ " 10½	19	19 " 11½	
9½ " 7½	14	14 " 10	19½	19½ " 11½	
10 " 8	14½	14½ " 10½	20	20 " 11½	

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HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars with and without covers.

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WEEKLY CALENDAR.

D M	D W	MARCH 27—APRIL 2, 1855.	WEATHER NEAR LONDON IN 1853.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
27	Tu	Aleochara obscura.	30.199—30.192	56—28	W.	—	50 a 5	22 a 6	4 1	9	5 36	86
28	W	Ptinus germanus.	30.379—30.295	61—28	N.W.	—	47	23	4 31	10	5 18	87
29	Th	Megatoma undatum.	30.387—30.312	60—31	W.	—	45	25	4 54	11	4 59	88
30	F	Byrrhus Pilula.	30.294—30.212	58—28	S.W.	—	43	27	5 11	12	4 41	89
31	S	Byrrhus fasciatus.	30.401—30.354	57—29	W.	—	41	28	5 25	13	4 22	90
1	SUN	PALM SUNDAY.	30.290—30.139	71—30	S.W.	—	39	30	5 m37	14	4 4	91
2	M	Agonum picipes.	30.409—30.250	62—32	E.	—	36	32	rises.	☺	3 46	92

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 54.2°, and 35°, respectively. The greatest heat, 75°, occurred on the 27th, in 1830; and the lowest cold 16°, on the 27th, in 1850. During the period 119 days were fine, and on 77 rain fell.

THE most recent, and one of the most useful, of horticultural publications is *The Book of the Garden*.* The volumes are beautifully printed, and illustrated with 1350 plates and woodcuts, some tinted, and all executed with most artistic excellence.

The author, Mr. M'Intosh, has filled the highest posts in gardening at the establishments of the Duke of Buccleuch and the King of the Belgians, and is now practising as a garden designer in Scotland. He is well qualified, therefore, by his knowledge, to be a teacher of gardening in all its departments; but the same knowledge enables him to form a sound judgment upon the practices suggested by others, and he has the good sense as well as the justice to sanction those practices, and to acknowledge the sources from whence he derived them. This renders *The Book of the Garden* the more valuable. Besides being a record of the author's own practice, it places before the reader the practice of others of the best gardeners down to the time of publication. All the contents are well arranged, and though nothing will reconcile us to the use of such terms as "Alliaceus," and "Acetariaceous," when "Onion" and "Salad" would have been as expressive, yet such words need not be insuperably offensive, for there is a good Index at the end of each volume, and in those Indexes the popular words are employed.

We recommend strongly these handsome volumes to all amateurs, and we have no hesitation in saying, that with them and *The Cottage Gardeners' Dictionary* for reference, they will have at hand all the horticultural information they can need for the cultivation of their gardens. We mention the "Dictionary," because in that is included a description and history, as well as the culture, of every genus and species of plant,—a special kind of information which *The Book of the Garden* does not give.

Although we delight even in the smell of such volumes as these new from the press, yet we delight, also, in the old literature of Gardening. It is told of Charles Lamb, that "he was very fond of picking up the little duodecimo volumes of Evelyn; and he mentioned his book of 'Sallets' with delight." We always admired Charles Lamb, and we now love him all the more, because we find that we were congenial in this fondness for old garden books. Nor will any one appreciate *The*

Book of the Garden less, if we compare some of its pages with those of an author "when Gardening, heavenly maid, was young."

We have, side by side, four strongly contrasted volumes—these two portly volumes of *The Book of the Garden*, and the two quaint little duodecimos, *The Garden of Eden*, "By that learned and great observer SIR HUGH PLAT, Kt." Full two-and-a-half centuries have elapsed between the birth-times of these books, for the first of the little quaint fellows saw the light for the first time in 1600, but the second not until 1675. This, however, the editor assures us, was in manuscript when the first was printed, and we can promise our readers that the volumes contain a far greater number of useful suggestions than the Marquis of Worcester's much-famed *Century of Inventions*.

Opening the first volume of *The Book of the Garden*, we find Chapter IV. devoted to "Heating as applied to Horticultural Erections," and a most copious and most satisfactory chapter it is; but passing by its practical details, let us gossip a little over its historical portion.

This portion states, "The most primitive mode of heating was that employed by the Dutch, which must have been in use towards the end of the fifteenth, or beginning of the sixteenth century, for at that period their gardens contained many East Indian plants. The system is still very generally met with throughout Holland and the Netherlands, although many instances occur of more modern methods being adopted. It consisted of the common stove of the country, placed at one end of the hothouse, *inside*, the smoke and heated air being carried along the middle or front in earthenware tubes, about ten inches in diameter, and smaller at one end than at the other, so as to admit the end of the one entering that of the next, the joints being secured by cement or soft clay. This method was also in use in this country, only with the improvement of having the fire placed outside the house, and burning in a small furnace similar to those used at present for heating wash-house boilers.

Another mode of heating then adopted on the Continent, and in some places still continued, was by a small iron waggon mounted on wheels, and filled with burning charcoal, which was drawn backwards and forwards through the house in severe weather! Strange as it may appear to many, such an apparatus was, not long ago, in use in the Botanic Garden at Oxford; and

* *The Book of the Garden*. By Charles M'Intosh, F.R.P.S., &c. In two vols. Vol. I. Structural. Price £2 10s. Vol. II. Cultural. Price £1 17s. 6d. W. Blackwood and Sons, Edinburgh and London.

was, in all probability, introduced by Bobart, a German, the first curator of that garden.

Such rude modes of heating being so pertinaciously clung to is the more extraordinary, because other and far superior modes of heating were suggested, and even practised at the time. Turning to the second volume of *The Garden of Eden*, we find that a near approach was there made even to heating by steam. At page 17 begins this passage—

“And for the keeping of any flowers or plants abroad, as also of these seeds thus sown within doors, or any other pots of flowers, or dwarf-trees in a temperate heat, with small charge, you may perform the same by hanging a cover of tin or other metal over the vessel wherein you boil your beef, or drive your buck (wasking), which having a pipe in the top, and being made in the fashion of a funnel, may be conveyed into what place of your orchard or garden you shall think meet; which room, if it were so made, as that at your pleasure it may become either close or open, you may keep it in the nature of a stove in the night season, or in any other cold weather, and in the summer time you may use the benefit of the sunbeams, to comfort and cherish your plants or seeds. And this way, if I be not deceived, you may have both Orange, Lemons, Pomgranet-Trees, yea, peradventure, Colocynthis, and Pepper Trees, and such like; the sides of this room, if you think good, may be plastered, and the top thereof may be covered with some strained canvas to take away at your pleasure. *Quare*, if it be best to let the pipe of lead to breath out at the end only, or else at divers small vents which may be made in that part of the pipe which passeth alongst the stove.”

Nearly half a century elapsed, however, before the general introduction of forcing houses gave to our science a new feature. Greenhouses were in use in the 17th century, but no regular structures roofed with glass, and artificially heated, existed until the early part of the 18th succeeding. Though a Pine-apple had been presented by his gardener to Charles the II. it is certain that they were only successfully cultivated here about 1723, by Mr. Henry Talende, gardener to Sir Matthew Decker, at Richmond; Mr. London gives the date as 1719. Mr. Bradley says that Mr. Talende having at length succeeded in ripening them, and rendered their culture “easy and intelligible,” he hopes Ananas may flourish for the future in many of our English Gardens. That forcing was rare, and but of late introduction, is further proved by Mr. Lawrence, who in 1718 observes that he had heard that the Duke of Rutland, at Belvoir, in Lincolnshire, hastened his Grapes by having fires burning from Lady-day to Michaelmas behind his sloped walls, a report to which he evidently does not give implicit credence, but which “it is easy to conceive.” That such, however, was the fact, is confirmed by Switzer, who further adds, in 1724, that they were covered with glass. The walls were erected, he says, at the suggestion of Mr. Facio. The walls failing in their anticipated effect were covered with glass, and thus led to the first erection of a regular forcing structure of which we have an account.

Switzer, the first practical writer on English gardening, thus traces the progress of the structure:—

“In one of the preceding chapters I have given an account of the method of building walls, and of the success of sloping, which I mention here by way of introduction;

because it has led the world to the following improvement of glassing and forcing Grapes, which was never done to perfection in any place as it is upon some of the great slopes of that elevated and noble situation of Belvoir Castle, belonging to that ancient and truly great family of the Mannesers, Dukes of Rutland.

“The first building of these sloping walls was at the instigation, and I believe by the direction of the author of a treatise in large quarto, of Fruit-walls Improved, (N. Facio Duillier.) That gentleman being at that time tutor to the then Marquis of Tavistock, afterwards Duke of Bedford, to whom it was dedicated; but notwithstanding the plausible shew made by that theorist, by which one would have thought that that accelerating would be more certainly performed; yet the gardeners found it did not do when reduced to practice, how well soever it appeared in the theory.

“This was the occasion that the late Duke of Rutland undermined this sloping wall, (which fell not because it rested on the Bank;) which being done, he caused a funnel of brick to be made behind the wall, and as it were under the border, to convey heat from end to end of the wall; this being done, he ripped up several parts in the wall at about ten foot asunder, (as I remember) which were carried forwards and backwards in order to heat the wall; led thereto, from what he had observed at the back of a kitchen chimney, wherein heat was plainly discovered to be the principal agent in this affair. After this expense, which I cannot say was great, his Grace was resolved to be sure, and therefore he glassed them all before as you do stoves, which penned in the heat to a great degree, and from this they had presently good success.

“It was my good fortune to come that way during some amendment that was making to this place, and finding that there were abundance of passages on the back of the wall, whereby I judged the heat evaporated very much, unless the fires were very strong; I took the opportunity to acquaint his grace with my sentiments, that as the root was the *primum mobile* of vegetation, and the grand source from whence the tree drew all its juices, I humbly conceived, that heating that part had been too little considered, and the heating the boughs too much; this occasioned a new amendment, and that was to shut many of the funnels on the back of the wall, and lay the greatest stress of the experiment on the roots, by making a larger funnel under the border, shutting up most of the back passages as before, and by often renewing the borders with fresh earth, and watering them well, which has answered beyond expectation, and has confirmed me in the opinion I was always in: that the fire in a kitchen chimney lying low, and being generally under the roots, is the greatest occasion of the maturity and acceleration of fruit, especially Grapes, rather than any adventitious heat that comes to the boughs.

“But be that as it will, I am satisfied by a noble and most ingenious observer of vegetable nature, that this is the all in all; for which reason he has made few or no back funnels to his sloping walls. And I must add one thing more which his Grace told me, and that is, that he is now trying of Figs, and does not doubt but to bring them to as great perfection as the Grapes.

“It is of great use that you put rubbish behind the walls, to prevent it from being damp, which it would otherwise be on all clayey soils.

“The expense of keeping artificial heat being not great, nor the trouble much, you must begin making fires about the beginning or middle of January, which will set the Vine to work about the beginning, or middle of February. The sun succeeds to second this artificial heat, which may be lessened as it increases its natural vigour, and the glasses may be opened on all fine sunshiny mornings, and remain, in case the weather is fine, till towards night; but the glasses must be shut down before the sun is gone off an hour or two, which retains the heat more strongly within the glass-case.

N. B.—“Peaches, Nectarines, and Apricots do not love to be forced, at least the fruit is very seldom good; for being naturally of a watery taste, and there being much occasion to keep the glasses close, the fruit is always rendered flat and insipid. This is not pure speculation, but the result of the practice that I have observed in the glass-houses at Brompton Park. On the contrary, the Vine is endued with that

noble raciness of taste, that no small want of air can alter or subdue it; and Nectarines are the next that I know of certainly, though I cannot but have a good opinion of Figs also, there being a very great strength in the taste, that cannot be over-balanced by any deficiency of air.

"To finish this account of accelerating or forcing fruit, I am credibly informed, that Cherries planted in pots, and the pots plunged in tanner's bark, and enclosed during the winter in a glass-case, have blossomed in January, and have had large green fruit about the fifteenth of the February following, which in all probability will be ripe in March; but yet it must upon the whole be owned, *that all fruit in its natural season, and in its natural way of ripening, is best.*"

The suggestion thus born was soon matured into a more entire forcing-house, for in 1726, Bradley published the *Appendix to New Improvements in Gardening*, and there is the description and engraving of a modern flue-heated hothouse, lean-to in form, and differing from it only in having the roof slated and sloping, so that the back is lower than the front. The sides and ends are glazed. Soon after, we find drawings of such hothouses, glazed and sloping, as we have them now.

We called a few days since, at *Bank Grove, near Kingston*, to see what effect the late frost had had on the large and most excellent collection of new, and rare out-of-door plants. We found hardly any harm has been done to a single plant, and never saw so many large *Camellias* in flower before, in one establishment. The largest of all the large *Camellias* in Europe, the celebrated *Reticulata*, is guessed to have 6000 blossom-buds now ready to open, and that, as far as can be judged, the whole will be in perfection between the 10th and 15th of April. There were 4000 flower-buds thinned off this enormous plant last autumn. We believe any respectable person may see this grand sight on application.

THE PAST AND COMING SEASON.

THIS has been a very late spring, and the different works about the garden are, and have been, fully as late as the buds and leaves. What ought to have been done in February had to be put off till the first half of March, and then we had hardly two days alike; if we had one dry day the next two were wet or foggy, and a good deal of "earth work" had to be got through in the worst possible state, particularly on heavy soils. Every kind of work, as digging, sowing, planting, and preparations, was all behind, and what could be put off for the moment was very gladly considered, on the principle of "too many irons in the fire," to be out of season just now; dressing walks, lawns, and edgings, could on this principle be deferred; while the sowing of Parsnips, Radishes, and Mignonette, must be done, whether the ground was in a fit state or not.

Now, although I am not going to predict the weather as soon as some would have me to do, I must refer to a statement which appeared lately in one of our leading articles, to the effect that very severe winters occurred at regular intervals of twenty-four or twenty-five years; and if that be so, there is a consequence to be apprehended at present, on the grounds on which I predicted the long frost, and that consequence is this: there are twenty-three chances against two chances that we shall have a very dry May, and not only a dry May, but six

weeks dry weather; whether the extra fortnight, however, be from the tail of April, or from the early part of June, the stars are dim, in addition to the 8 per cent. against the drought altogether.

LAWNS.

If this dry weather should really come just at that time, those who put off the proper spring treatment of the grass, or lawn, because other works were behind-hand, will be in this awkward position, namely, that the lawn will be so harsh, hard, and uneven under foot, as to make it all but pleasant to walk on at any hour of the day. Sailors are the best judges of the weather at sea, and, depend upon it, old gardeners are the best judges of it on land; but the effects of frost and wet, or of tramping on grass in slushy weather, do not require much judgment in foretelling, if a sudden drought intervenes before the roller and the broom have made our lawns "as smooth as glass." I know one lawn, and one only, which is now as smooth as this page, and if the drought were to begin to-morrow this lawn would still be as smooth, and even, and as easy to walk on as a carpet all the time. I know another lawn, which is yet too young from seeds to be of that soft, pleasant, mossy character which we all admire. This lawn is somewhat patchy, and was very sloppy to walk upon for full a month after the frost; but it is now as smooth as glass, comparatively, and a quantity of best grass-seeds are to be sown all over it this week, or the next week, at the farthest. There is a large heap of pond-mud, and about twice the quantity of sifted coal-ashes, with dust, and soot, and sweepings from a number of villas, to be spread over the seeds, and by way of dressing to the rest of the grass. The pond-mud is frosted, and is now mellowed and crumbly, which is the best state for this kind of work; it is not rich, as no strong water ran into the pond; but it is very soft and slimy from the sand and vegetable remains which the rains washed down from higher ground into the pond; and the owner thinks this compost will be very likely to help his new lawn to get mossy; but I regret I could not, from my own experience, tell him anything about it. The only effectual mode of mossing a lawn that I know of is to turf it all over from a sandy common, which is generally more or less mossy. The mowing-machine is more favourable for moss than the scythe, because it keeps the grass more uniformly even, and never cuts too deep here, or skims over it there, as some mowers do; but gives fair play to both grass and moss. The lawn which I spoke about in the winter, as having then been cut over very closely, in order to subdue the moss, is now in the very best condition I ever knew a lawn to be in at this season, and the old gardener is evidently very proud of it; for he *will* have it rolled almost every week, and wishes his father could rise to see it!

A little Dutch or White Clover, and the Cow-grass Clover, or Perennial Trefoil, would improve the best lawn, if sown before the middle of April, with a little of the finer grasses, which all the great seed-growers can now furnish cheap enough; this is by far the best and cheapest plan; the old plan of taking what seed could be gathered from hay-lofts is the very worst plan which one can adopt, as all manner of seeds are thus introduced, to the great injury of our "foot pastures." We have seldom had our lawns so well, and so soft, and ready for seeds, and so late as they are this season, therefore, not in such good condition for this application as they are now; but the work should not be delayed beyond the middle of April, even if we did not expect a dry May to follow.

SOWING FLOWER-SEEDS.

This is just the proper time to sow all the best flower

seeds for the beds and borders, both in and out-of-doors; and the first I shall mention is the new autumnal, yellow annual, *Eucnida Bartonoides*, which I mentioned last autumn. I still hold the opinion, that it is more suited for pots than beds; still, a bed of it ought to be tried everywhere, as if it should turn out to be manageable that way, the bed may be expected to flower on till the end of September, from a sowing in a moderately warm frame about the middle of April. I would sow and treat it exactly as I would *Salpiglossis*, *Portulacas*, or the small, blue *Lobelias*; that is, get it up quickly, in a mild hotbed, in light, sandy soil, and then remove it to a cooler place to grow more slowly, and get hardened before I would prick out the plants into other pots. There is no reason for hurrying it on, as, probably, none of the spring-raised plants, if sown ever so early, could be got into bloom before the month of July; but all that we have to learn yet.

Suppose a small bed was sown now with *Bartonia aurea*, or *Sphenogyne speciosa*, that bed would be done flowering by the time this new yellow plant would be throwing-up for bloom; and, therefore, it might follow either of them in a regular garden arrangement of colours. It did not appear to me to require a very large pot; and three shifts would be sufficient for it:—first into a 60-pot; then into a 32-pot, say, at the end of May; and five weeks after that, to be finally placed in a 16-pot; and being a flower which is certain to attract the attention, it is well suited for pot-purposes from the drawing-rooms and conservatories to the window-sill. A packet of the seeds may be had for sixpence.

It is full soon yet to put in or sow *Balsam* seeds for plants out-of-doors; the first of May is time enough for them, as they will not bloom comfortably in the open air until after the middle of July, but they are certainly a good addition to the mixed borders in the autumn; and which is as much to the purpose. A well-bloomed *Balsam* out-of-doors is a sure sign of skill and competency in the manager; for, let me say it fearlessly, it is not a bad hit to show off a batch of *Balsams* in the open air in this country.

Black-eyed Susans, or the different varieties of *Thunbergia alata*, are a set of plants which few people have the courage to rear for the flower-beds, but I hardly know a plant more fanciful, more gay, or more easy to manage that way, far more easy than to get them up well in pots for the show house. Three years ago, I told how they did them at Claremont—just like a hedge of Sweet Peas, and they flowered much longer than Sweet Peas, and ripened seeds as well in front of the hothouses. I used to grow them for years against the shaded side of a conservatory wall, and in mixed borders; in the latter, I let them go as they listed, when some trailed along the ground and flowered in abundance; others climbed up, or rather turned up the sticks which supported other plants, and then hung down carelessly when they could find no more support; and all of them flowered till the frost came; and I saw a bed of mixed plants, last year, which was not cut out of the grass till June, one-third of the plants being of these very *Thunbergias*; the whole of the soil was new, and all the plants were more luxuriant than usual, but none so much so as the *Thunbergia*, which trailed over everything, and flowered in the wildest confusion, encroached on the grass, and had to be trained back or cut by the scythe; it was the end of October before they failed, but I did not hear if they ripened seeds. The hottest and dampest place in the garden is the best for them; but they seldom do well against a south wall, as the red spider takes to them the moment they get overheated or too dry.

The common red *Pentstemons* grow among *Rhododendrons*, in peat, better than anywhere else in the garden, if there is sufficient room between the plants for them. Every one of the *Phloxes* has the same partiality for peat,

and more especially if it is fresh. The best reds, purples, pinks, and whites of them, if mixed all over an American bed, would carry on the same colours as the *Rhododendrons* through the autumn. This is a good time to try this experiment with the trimmings from the old *Phloxes*, then, by planting a row of these *Thunbergias* all round the outside of the *Rhododendrons*, the *Thunbergias* would run and scramble over the outside *Rhododendrons*, and the whole would be as gay and as curious as anything one could make out of a few spare plants, and with no more room than there is at present; but after you rise above a certain stamp or style of gardening, I do not think this plan would be in character. It is rather where one is tied down in space that these expedients are in good taste; but taste takes a wide range, and there is no reason against one making the best of his own garden.

The new *Eschscholtzia tenuifolia*, which Mr. Veitch exhibited last July, is well worth trying against the old ones. It is much dwarfer and of more upright growth than the old one, and will do to sow in the open ground any time during this month. The dark blue, or violet-flowering *Whitlavia grandiflora* is equally new, and worth a trial as a new annual. There is a full account of it in my report of the last July show at Chiswick; and there are many good varieties of the old *Convolvulus major* which many people never saw or heard of, but which are very useful as summer climbers, in various ways. The places for them should now be marked out, and some rich, fresh compost put in the places intended for all such, while the garden is undergoing the spring work.

Those who saved plenty of seeds of the different *half-hardy plants* might now sow some out-of-doors, in addition to what they intend for pots in heat; many seeds can be raised in a bed under a warm south wall, with a tenth of the trouble by pots and hotbeds; and if the season should be against them there will be nothing lost, and some experience will be gained, with a chance of success; but where one has to buy every such seed they are too precious to be risked out at first.

A packet of the seeds of the different *Portulacas* might be sown over a bed of spring bulbs; and although these seeds are of the very smallest, I have seen them do very well that way, and the plants to flower all the season without any more trouble, after the bulbs died down or were removed. The very dwarf *Coreopsis tinctoria* is now to be had in the seed-shops; it is not more than six inches high, but flowers as freely, and the flowers are quite as large, as those of the old sort; the least heat will bring them up, or they may be sown in the open ground at once. When one is pinched for room where to sow all the seeds of this or that plant, take the best spring bed now in bulbs, or mixed plants, and sow it all over with one or more kinds; little seedlings will do no harm to the other plants, and they are always under the eye, and as the season warms, they can be moved somewhere else. A great deal may be done in a small way by a few harmless shifts of this kind. I have often put a pinch of seeds in the middle of a cutting-pot, and had the two crops as one.

China Asters and *Ten-week Stocks* will come up, after the middle of April, as well among a bed of *Hyacinths* as in a hotbed, though not so soon.

A whole bed of blooming *Cinerarias* might now be planted out near the windows; and if a mat is thrown over them at night, they will bloom longer, and as fine as those in a greenhouse, besides making more room for other things. All the forced *Roses* which are now over, or past their best, might be cut down. Yes, cut in so much as you would last November, and be all the better for it in the long run; they will soon spring afresh, and you have the very best cuttings from this pruning. While the cutting-frames are in work, I would not lose a

chance like this for a trifle, or for fear of spoiling a plant by cutting just at the time when all plants are naturally given to fresh growth.

DIELYTRA SPECTABILIS.

A gentleman near me sent, last night, to inquire if he might make cuttings of a beautiful *Dielytra spectabilis* he has in bloom. I told him, every two joints of it would now root, and that he had better take the opportunity, as I know he does not keep up a hotbed all the summer; but those who do had better spare their plants till they are out of bloom, and till there is more room for the cuttings, as this *Dielytra* will come from young cuttings all the summer through. D. BEATON.

HEXACENTRIS MYSORIENSIS.

"Our plant of this has lost all its leaves, and yet it has seldom been below 50°."—"We painted the pipes of our houses in the cold weather with dark paint, containing a good portion of lampblack and sulphur; and this and several other climbers and plants have lost their foliage in consequence."—"Our young plant of this *Hexacentris* refuses to grow, and is always eat up with the Red Spider."—Such are a sample of the complaints that have reached us within a few weeks, most of which will be met in the ensuing remarks. As not referring to this plant particularly, but to all plants, I may state, in passing, that a worse time could not have been chosen for painting the pipes. Oil and lampblack answer very well for this purpose, and so does common paint, of whatever colour may be agreed upon. A dark colour is generally preferred, because it radiates heat most freely; but some people prefer having them of a dark stone colour. Whatever the colour, the operation should be performed in summer, when they will dry quickly. The injury done by performing the operation in cold weather in winter, when strong fires were necessary, was just what might have been anticipated from the poisonous fumes of the lead thrown in the atmosphere of the house. We have had tender plants often injured seriously from being left in a house while the wood-work was painted. Unless the pipes were excessively hot the sulphur in the composition would do no harm. In general, however, it will be advisable not to mix the sulphur with the paint, but to put it on the pipes afterwards, when necessary. I observe that a correspondent complains of suffering from having coated his pipes with tar, and I am sorry to say, that he will not be wholly safe until every bit of tar is wholly scraped off from them.

1. *Training*.—Few that saw this *Hexacentris* when first exhibited by the Messrs. Veitch will easily forget it. That eminent firm does not seem more distinguished for the introduction of novelties than for the knack of growing these, so as to show them off to the greatest advantage. Imagine this creeper to be trained to a flat trellis, like a *Tropæolum tricolorum*, or to a rounded ballooned-shaped one, as is often used for a *Kennedy* or a *Zichya*, and though the plant might be interesting, its peculiar characteristics would be unnoticed. Like some species of *Æschynanthus*, the flowers something similar in size, and crimson, orange, and yellow in colour, are collected in little bunches; but, unlike the *Æschynanthus*, resembling in that respect some other families in the *Acanthad* group, such as *Dipteracanthus*, the flower-bunches are suspended upon long, slender threads. The suspending of the flowers, therefore, must form a part of its management if the plant is to be shown off to the best advantage. In exhibiting their plants, therefore, the Messrs. Veitch showed it trained like a lady's parasol, before the present Lilliputs came

into fashion; the plant being taken up the handle, trained along the top, and the flowers hanging gracefully with their threads suspending them beneath. For pot-culture, no mode of training can excel this for showing the beauty of the flowers. When the plant is trained to a rafter, or over an arch, the flowers will hang down naturally.

2. *Propagation*.—Firm side-shoots, a few inches in length, cut over at a joint, with a joint or two with buds in their axils, left above, strike with least care, but they require more time than young shoots slipped off with a heel, when two or three inches long, having grown that length after the plant was thinned and pruned in the spring, and placed in sand over sandy peat, under a bell-glass, and in a brisk bottom-heat. The chief care in this latter case is to tip up the side of the glass at night, to prevent the cuttings damping off. As soon as struck, they should be potted off in small pots, in sandy peat, with a little leaf-mould, and very little loam, and be kept in the same hotbed, and rather close, until growth is freely proceeding. A shift or two may be given as required by the state of the roots. A plant thus raised in the spring of 1855 might be expected to bloom in the winter of 1856, and the early months of 1857.

3. *Potting and Planting*.—When to be grown in a pot, a twelve-inch one would grow a nice specimen; and it should obtain its flowering pot early in summer, that the pot may be full of roots, and the wood getting firmish and ripe before winter. If to be planted out in a plant-stove, to cover a rafter, it will be advisable to give it a large pot, or to brick off a partition or division, from fifteen to eighteen inches square, for it, or there may be more growth than flowering. In either case, drainage must be thoroughly attended to, or there will be sickly growth. The soil may be equal parts of turfy, sweet loam, fibry peat, and leaf-mould, and one portion more of nearly equal parts of silver sand and charcoal. During the summer, manure-watering may be given once a week, and as soon as the flowers begin to come, a top-dressing of old cow-dung will be found an advantage.

4. *General Management*.—*Pruning*.—This should be rather freely resorted to when the flowering is over, cutting back the younger shoots. Care should also be taken that the young wood produced in summer is not too thick, as, upon the ripening and hardening of that wood, by exposure to sunshine, the blooming in winter and spring will greatly depend.

Temperature.—Being a tropical plant, we can hardly overheat the plant in summer, but in winter it will be very easy to under cool it. It does not seem to remain healthy much under from 55° to 60° with fire heat. If it was desirable to bloom a plant late in spring, it might be kept in a little lower temperature in winter, provided no more water was given than just sufficient to keep the plant from flagging, and that little thrown over the foliage as much as possible, in preference to giving much at the roots. When a plant is in bloom, the flowers will not open freely under 60°, and a dryish atmosphere must be maintained, which of itself shows the importance of wielding the syringe zealously previously, to banish, if possible, every trace of its great enemy, the red spider.

Watering.—This has been pretty well alluded to. In summer it should receive all that is required; and a damp atmosphere and a free use of the syringe will then be great helps to success. As the autumn comes on decrease water at the roots, but keep up a washing over the leaves in a sunny day until towards its close. The dryish state of the roots, though not dry, and the cooler temperature, and the drier atmosphere, will generally incite the flowers to show themselves, when more waterings of warmed water should be given at the roots, with a rise in temperature; and as the dry air and

the fire-heat, with little or nothing of the syringe in the dark months, will encourage the red spider, that must be prevented by sulphur exhalations from a hot-water pipe, or being placed in a hot-water plate, raised to a temperature of about 175°. With the suitable conveniences the plant may thus be cultivated successfully; but no possessor of a merely warm greenhouse had better attempt it. It requires a temperature quite as high as the great favourites of our stoves, the *Combretum purpureum*, and the *Bignonia venusta*.

HEXACENTRIS LUTEA.

This is a greater novelty, introduced by the same firm, and I am not aware if it is yet much in the market. The flowers are yellow; but the characteristics of the plant, and, I presume, the mode of culture, is similar to that adopted for *Mysoriensis*. It was also sent by Mr. Lobb from India.

THUNBERGIA.

The culture of this genus, belonging to the same order of Acanthads, was given in an early volume. There is hardly any resemblance between the appearance of these pretty flowers and the blossom of the *Hexacentris*, unless, perhaps, a little approach in such a species as *T. grandiflora*. I introduce it here to meet some enquiries, and to prevent disappointments.

With the exception of *T. Hawtayneana*, I have grown almost every species and variety of the genus. I once bloomed well the beautiful *Chrysops*, with its blue-violet corolla, and bright golden eye. A time or two, I have had a few flowers upon it, and for other seasons I have not had a flower at all. I attribute the flowering it fairly to a mere lucky hit on my part; for though I tried the same modes, and various other schemes, I never again could do anything successful with it, and, therefore, I was obliged to confess myself defeated. With respect to this Sierra Leone species, I must, therefore, decline giving any practical information; and this may elicit some good intelligence from those who have been more uniformly successful. With the others, I have never had any difficulty, except in keeping them free from the red spider, and that can only be successfully done in a moistish atmosphere, with a free and uninterrupted use of the syringe. The whole of the varieties of *Alata*, such as bull-yellow and dark eye; white with dark eye (*Alata alba*, or *leucantha*); orange with dark eye (*Aurantiaea*); and yellow with whitish eye (called by many names); are more subject to this pest than almost any other plant. It is with respect to these *Alata* varieties that information is chiefly wanted; and that will be afforded in answer to the following enquiries, merely premising that when treated as an annual, the seeds should be sown in March or April, and plunged in a brisk-bottom heat, such as a cucumber-bed at work. A heat of from 80° to 90° will not hurt them, if there is moisture attending it. As soon as up, and a few inches high, the plants should be potted off, and kept close, moist and warm, until they get some size, and be hardened off by degrees from the middle to the end of June.

1. "Can I succeed with *Thunbergias* in the open air, in summer, in the climate of London?" We have had them very fair against a wall, or up a pillar, planted out towards the end of June, and good sized plants when so turned out. Many years ago, I recollect seeing beautiful wreaths of these running along a chain, or ropes, that connected a row of baskets, or vases, at Henwood, but neither before nor since have I ever seen them do so well in such circumstances. The place was warm and sheltered. Much north of London, I have never seen the plant do much out-of-doors, except for a month or six weeks in the hottest weather.

2. "How can I have fine-flowering plants of *Thunbergia* in my greenhouse in summer? I have forcing-houses, but no plant stove." Sow as advised, and pot and repot, and keep in dung-heat as long as you can give the plants room; nip the points of the shoots to make the plants a little bushy; remove the plants to a shady place in any forcing-house commanding a night temperature of about 60°, with a rise of 15°, or more, from sunshine, and here place your plant on a trellis, or a branch, and train. When the space is covered, expose to more light, and ere long flowers will come freely from the joints, when, by the middle or end of June, you may remove the plants to the greenhouse. If you intend them for a pillar there, the plants should be trained to a rod or a string. July, August, September, and the first part of October, are the periods that *Thunbergias* will be finest in such a house. When there, the house should be kept closer and moister, where they stand, than for greenhouse plants; and from the day the plants are moved from the moist dung-heat they should never know what it is to be without the syringe over them for a single day. If put on at all carefully the flowers will not be at all injured. In addition to this syringing, so long as the plants remain in a forcing-house the pipes should be brushed over with flowers of sulphur. After removing to the greenhouse, a little of the fluid formed by boiling sulphur and lime together, as previously detailed, put in the water used in syringing, will also be useful; and if the place where the plants stand are at all exposed to the sun, if the pots are set upon moss, kept moist, it will be an advantage. With these little attentions, I have frequently had nice plants, that you would have searched in vain for a spider, even with a microscope.

3. "M. D. has a fine show of those along wires and arches in his plant-stove, early in spring, and keeps the plants from year to year. I thought they were annuals." They are treated as annuals, because the old plants are so liable to the attacks of insects. There is no difficulty in keeping them, but on this account. The flowers, even in a plant-stove, do little good in winter. When I kept them over the winter, I used to prune them in very close in November, removing all the younger growth, and the greater portion of the leaves, and then wash the stems and shoots all over with sulphur-water in which a little soft-soap was dissolved. Little water was required at the roots for from six weeks to two months after this process, and, if possible, more air was given. As the shoots began to break, part of the old soil was picked out and fresh added, and more water given, and as soon as the syringe could safely be brought into play it was not neglected, nor yet a brushing over the hot-water pipes with sulphur-water. By such means, nice, clean, flowering plants may be obtained in March, April, and onwards.

4. "We grew these last season, but we had large, healthy leaves, almost like Cabbages, and the flowers were but scanty, which we attribute to using rotten dung, in addition to loam and peat, as recommended by *The Cottage Gardeners' Dictionary*."—By turning to the *Dictionary* you will find that lime-rubbish was spoken of as a part of the compost, while the dung was spoken of as "little."

I have not had these beauties what they ought to be for a year or two, and chiefly because two potters in succession had dipped rather deeply into the dung heap. Were the *Dictionary* to be re-written, I would keep out the words a "*a little rotten dung*" altogether, and recommend the applying of a little merely as a top-dressing when the plant showed signs of weakness. Any quantity at all in the compost, especially if the plants are treated as annuals, has a tendency to make the leaves too large, and, as a consequence, they shade and hide the flowers, whilst much fewer are produced.

Previous experience would say, that in the case of young plants especially, when it was desirable to have a dense mass of bloom, with but small foliage, the *compost* for the first potting should be sandy peat and leaf-mould, with a little fibry loam; the next potting should have more loam, less peat, no leaf-mould, and a little lime-rubbish and charcoal; while, for the final potting, fibry loam and rough lime-rubbish should be the chief constituents. This will secure short joints, abundance of bloom, and small leaves; and then the first signs of a too great weakness may be easily remedied by manure-waterings, or a surface-dressing of old cow-dung. Loam, peat, and lime-rubbish, all rather rough, will produce plants in a medium state, as respects abundance of flowers and luxuriance of foliage; but when flowers are to predominate over leaves, the *compost* must be hungry and poor. Good drainage, and abundance of water when growing and blooming will, with these other hints, furnish the means of success. Good, clean specimens always speak of good, attentive gardening.

R. FISH.

MUSA COCCINEA.

(THE SCARLET MUSA, OR PLANTAIN.)

If this plant had been lately discovered by such a collector as Mr. Lobb, and sent to such a nurseryman as Mr. Veitch, it would have been thought one of the finest of plants for the stove. Unfortunately, it is not fashionable, and is neglected, and almost unknown. It is a great pleasure to me, now and then, to drop upon such plants, and endeavour to rescue them from neglect.

The Musas are a noble race of plants, quick in growth, with extraordinarily fine leaves; I have measured one ten feet long, and one-and-a-half feet wide. This was produced on the *Musa sapientum*. To the uninitiated, I may just say, that the Musa tribe produces in hot climates the fruit called Banana, or Plantain. The *Musa Cavendishii* is a later introduction, and is a dwarfer species.

The *Musa coccinea* does not bear fruit, but it has large leaves; grows about six feet high, and the flower comes up amongst the leaves, and is large, and of a most brilliant, deep scarlet colour. The finest specimen I ever saw was grown in an old tan-bed, in a stove, that formerly belonged to the late R. Salisbury, Esq., at Chapelallorton, near Leeds, in Yorkshire. There, amongst many other rare plants, the *Musa coccinea* flourished with a vigour and luxuriance that would rather astonish our crack plant-cultivators of the present day. The plant was in a large pot, and had thrown up seven or eight stems, with numerous fine, healthy leaves, and a large spathe of flowers in each cluster of leaves. I believe it had not been potted for several years. The roots had got through the bottom of the pot, and also had crept over the rim, and thus the plant had a large pasture to draw support from. The gardener gave it, during summer, many a strong dose of manure-water, which added to the nutritive power of the decaying tan, and thus caused this fine old plant to display its beauty to the utmost; but as every grower of stove-plants may not have an old tan-bed, I will endeavour to give general hints on its culture, such as every cultivator may put in practice.

CULTURE.—I can scarcely tell where a plant may be purchased of this Musa. It is so seldom asked for that nursery-men have given up growing it for sale. Probably it might be had from some botanic garden. I remember seeing several plants in the Birmingham Garden, some time ago, and most likely Mr. Catling will keep some by him. I may just mention, that whoever will grow this plant on my recommendation must remember, that it

requires in height of space at least seven feet, and also a brisk, moist heat. Whoever has these two things may venture to look out for and obtain a good plant. Having got it safely home, then prepare a mixture of loam, peat, and well-decomposed dung, in equal parts, and place it in a warm place to dry and air. Choose a pot considerably larger than the one the plant is in, drain it thoroughly, and proceed to repot the plant. The best time to do this is in early spring. If you have the convenience of a warm tan-bed in your stove it will be of great advantage to plunge the newly-potted plant in it, only be careful the bottom-heat does not exceed 80°. In this bark-bed your Musa may remain for three months; then take it out and examine the roots; if the pot is quite full, give the plant a second shift, and replunge it. It will make rapid growth, and its fine foliage will delight every one. Keep it well watered, and every third time add a quart of manure-water to four quarts of tepid rain water, and with this rich food give your plant a good dose; what is spared may be given to other strong-growing plants that require such rich feeding. The leaves should be frequently syringed on both sides, to keep off the red spider, which is partial to this plant, and increases fast on its capacious leaves. Should they get the upper hand, take a large, soft sponge, and wipe the leaves over two or three days in succession, that will entirely clear them of this tiny but destructive enemy. In the latter part of autumn, and all the winter, give much less water, and let it be pure. If the plant has done well it will, about May, show its flowers, and should then have an increase of water.

After the flowering is over cut it down, and encourage the young suckers that spring up to grow, by repotting, and watering with manure-water occasionally. The second year there will, most likely, be three stems instead of one, and these will, if well managed, produce each a spathe of flowers; the plant will then be a healthy, fine object. The tan-bed is not absolutely necessary, but, as I said above, it is an advantage. I have found, when no tan is used, the wrapping round the pot with moss has been a good practice, and also a covering on the soil of cakes or hard lumps of dung has greatly added to the growth. The great points to aim at are, plenty of pot-room, a high, moist temperature, and rich soil, well-drained. By applying these with all diligence, this plant will reward and gratify the cultivator.

PROPAGATION.—It is easily propagated by taking off a sucker from the main plant as soon as it has a leaf and roots of its own. Pot the sucker, and place it in a close, warm, shady place till fresh growth takes place. It is then a plant, and may be treated as such in the manner described above.

T. APPLEBY.

ADVICE TO YOUNG GARDENERS.

(Continued from page 474.)

My young friends are, I hope, travelling on the road of improvement, and striving, by close, persevering study, and firm self-denial, to attain to the character of a good, efficient gardener, and a worthy member of society. Some men are striving to win reputation in the field of warfare, acquiring a good name for killing their fellow men; others strive to achieve triumphs in courts of justice, plodding for their clients with all their might, whether the cause is just or not; others, again, are senators, striving for place, or passing laws, thereby to win fame and popularity; but our triumphs are of a more peaceful nature. Gardeners strive to win from the soil beautiful plants, excellent fruits, and improved, wholesome vegetables. The man who does his duty in his garden, and skilfully directs his operations throughout

the year, wins not only fame, but health of body and peace of mind; results if not so vain-glorious are far more gratifying to a Christian man. I know no rank of life where the operatives are (in general) so comfortably off and so happy as serving-gardeners. Their occupation inclines them to be moral, sober, respectable, and happy men, and I am proud to belong to such a body. A man who is constantly among the stars of the earth—flowers—must be very depraved indeed if his mind does not receive a tone from those lovely objects he associates with every day of his life.

I have on this occasion (continuing my subject) to write upon *Visiting Gardens and Exhibitions*, and *Exhibiting* also. I shall take these in rotation.

Every gardener should, occasionally, take a little tour and visit gardens. He should keep two objects in view in so doing; one is to note every improvement in his neighbour's garden, and the other, a mental note of his own deficiencies. Good feeling towards his fellow-gardener, and probably friend, should always be shown as a matter of right. We are all social, or ought to be social beings, ready to do good to others, not merely for the expectation of receiving a like return, but out of pure good will. Many men visit gardens for the purpose of begging cuttings, or, perchance, plants, and where the owner is willing to allow his gardener the blessed privilege of giving, it is very right to do so; the giver can then, on returning the visit, ask, with a good grace, for anything he sees desirable in his friend's garden. Each garden would then be doubled in its resources; but let me earnestly advise my young friends both against giving and begging cuttings, or plants, without the full consent of their employers.

If a lady or gentleman will not buy plants, they cannot reasonably expect their gardeners to go out and beg them: or if they do, the party receiving them ought, at least, to have the privilege of giving by way of return to whoever has been so kind to him. This exchanging of cuttings and plants is very pleasant and neighbourly, but the parties ought sometimes to give the nurseryman a turn, in order that he may have a chance to live.

Others visit gardens for instruction and improvement. This is a legitimate object. No reasonable gardener can object to it. In order to impress these matters on the mind, the visitor ought to carry with him a note book. He may see, perhaps, a hotbed for cuttings made—note down, "I must do the same when I get home." He may see a plant that he has at home, but does not know its name; if possible, learn it by enquiry and book it. In all such matters, it is by far the safest plan to note them down. It is soon done, and the record is safe.

He may observe some extra fine Grapes, Peaches, or any other plant, perhaps superior to those he has left at home; let him try, by enquiry about the subsoil, the soil, the method of pruning, or any other point, the reason why these articles of garden produce are so fine. Never be above learning, nor yet seeking for information. He is a dry subject indeed from whom no addition to our knowledge can be drawn.

Also, let me warn my young friend against detraction. Your neighbour may not succeed in his gardening; his Grapes may be red instead of black; his plants may be sickly and full of insects; his wall-trees may be badly trained and barren, and his garden overrun with weeds. He receives you at least civilly, and shows you round his garden. Are you, the moment you go out, or any time after, to indulge in sarcasm and sneers? Certainly not. There may be a reason why the garden is not kept up; means may be wanting; hands scarce, &c; and in such cases, the gardener, instead of being crowded over by his neighbour when he called to see him, ought to be pitied, and as much as possible assisted.

Again, when men of any business, but more especially gardening, meet and have a friendly chat, discussions on principles of gardening are almost sure to take place, and ideas knocked together, shaken, and new combinations are almost sure to be the result. I know no man so thoroughly practical in that respect as my friend Mr. Errington. I have visited him many times, and the moment after friendly salutations were over, his usual words were, "Well, what shall we talk about?"—"I want to know how you grow such and such Orchids; tell me, and I will try to return equally useful information to you?" At it we would go, as he said, "tooth and nail;" and on my part, I can truly say, I never spent half-an-hour in his company without rising up a wiser, if not a better man. Visiting such gardeners will be, then, of real benefit to a young man just entering upon his first place.

He should, also (always, of course, with his master's leave), sometimes visit the London Nurseries, or such in the country as the Bagshot Nurseries, to see American plants well-grown, and also Coniferæ. Also Messrs. Veitch's, of Exeter. Pince and Co., of the same place. The Bristol Nurseries, and those in the neighbourhood of Edinburgh. Also, on great occasions, a fortnights tour on the Continent would be of great service to a diligent observer and a zealous seeker after knowledge in his profession. Now that steam has, by its wonder-working power, almost annihilated space, places many be visited in an almost incredible short space of time. The man who always stays at home may be a sober, diligent man, but he will be sadly behind the age, and will, most likely, become opinionated, intractable, unsocial, and certainly not a go-ahead man, which it is necessary to be now-a-day, if a man desires at all to succeed in any business.

T. APPLEBY.

(To be continued.)

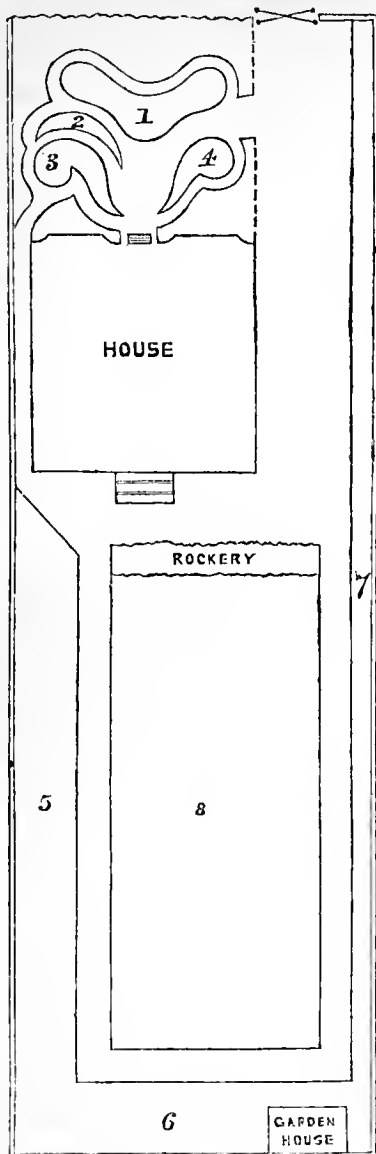
GARDENING FOR THE MANY.

FLOWER-GARDEN.

It has often been remarked that there is more difficulty in managing a small garden than a large one; and, to a certain extent, this may be true; for to manage a small one, so as to have its produce at hand every day in the year, is certainly not so easily accomplished on a small scale as on a larger one; nevertheless, much may be done by method, and that all-important qualification of doing everything in its proper time. This is equally necessary in flowers as in vegetables, and, perhaps, more so; but as we will give directions, from time to time, regarding both, the present chapter will be devoted to such general terms as the Flower-garden department seems to require; together with its adjunct, the Rockery, which, according to our sketch, forms a sort of boundary between the Home and Kitchen-garden.

Beginning first with the Flower-garden department, which is all comprehended in the small plot between the front of the house and the main road, we do not, by any means, assume that the design here given is the best in all cases; our purpose is more to give directions to the culture and management of plots of ground similar to the one which the intelligent correspondent has favoured us with; but, taking his sketch as a sort of guide, and the extent of his ground into consideration also, there does not seem much reason to find fault with his design, although it will be seen that his figures all point to his house, and none to the other direction, as is more frequently the case; but leaving this, and supposing that each amateur has certain motives of his own for the particular mode in which he lays his ground

out, we will leave to his own discretion the shape, size, and number of his beds, as well as their circum-



ferential borders, if there be any, and will merely advise him not to crowd them too closely together, nor yet make them too small; and if he has the ground to lay out afresh, we will take the liberty of saying, that in most village and suburban places, a piece of nice turf is as useful and ornamental as any other surface could be, taking the whole twelvemonths into consideration; therefore, do not let it be too much cut away; and likewise, let it be borne in mind in forming beds, that fancy-shaped ones look much better on paper than on the ground; in fact, a plain circle and oval are the prettiest shaped beds I know of; and, when planted, invariably look best. Points and corners, as well as all intricacy, are lost when plants get up a little; and the very smallest mark, to a certain extent, the features of elaborate scrolls and other whimsical shaped beds; besides which, where such figures are not kept in their exact shapes with mathematical accuracy they offend the eye very much.

When a number of residences, with their respective gardens, lie contiguous to each other, there is generally an anxiety for variety, and some aspirant for horticultural novelty cuts the whole of his grass plot up and lays it out in the Dutch fashion, i.e., with a series of fancy-shaped beds fitting into each other, and gravel-walks between; the edgings being either box, stone, or something that will clearly define the outline. This gives

more ground space for flowers; but I am far from advising its adoption, except in rural districts, where the abundance of grass land and foliage on all sides can well afford this garden space devoted to a closer system of tillage; but in all village or suburban plots, where the eye of the spectator cannot well turn at the same moment from this mechanical contrivance of beds to an ample survey of rural scenery, in the shape of trees and meadow, I would advise the amateur to consult the opinion of some one of good taste in such matters, before he disturbs his turf-carpeted front—if it be so; for I would rather see it studded over with artificial objects, as vases, sculpture, &c., than that the beautiful turf should be entirely removed; for, be it remembered, that with the best of management, flower-beds look naked and bare a considerable time during winter, when turf looks remarkably well. At the same time, the amateur had better not devote too large a space for flowers alone, but add here and there a shrub to break the monotony of plain ground work; and, as his space is small, large things must not be introduced, but such plants as Irish Yew, Junipers, Box, and now and then a Yucca; while standard Bay and Portugal Laurels will be very appropriate; and, as a slow-growing shrub, the Aucuba will be useful; fast or coarse-growing ones will hardly do; and there is but little room for deciduous ones. Rhododendrons must not be planted on a chalky soil, unless it be prepared for them; but on stiff, retentive soil, not very dry, they will do very well.

With the above general observations on the small flower-garden, we now look to the back of the house, and find there a piece of rockwork, which may also be regarded as a portion of the flower-garden; and, as it is supposed to be already in existence, I will not say anything about its construction; for there are few things connected with gardening that it would be more difficult to convey, in writing, a just knowledge of what it ought to be than a piece of rockwork. I confess to not being able, at any time, to please myself with anything that I have done in that way; and I have seen but few specimens of rock-work that come up to the mark of what I think it ought to be; leaving, therefore, to the amateur the task of dealing with his fancy stones, roots of trees, &c., as his taste may dictate, I only beg him to bear in mind that the mound of earth forming the basis of operation ought to be of good, useful material, as its crop will be heavy, and it is not easy to communicate manures to it except of a liquid kind, which may not always be forthcoming. It is also right here to observe that it would be prudent not to plant any of the large-leaved *Periwinkle* in a small rockery, as its rambling habits kills everything else; neither should the smaller kind be planted to any great extent; but as something green is wanted to look upon in winter, small plants of *Savin*, *Juniper*, *Box*, *Cotoneaster*, and some other low-growing shrubs, might be placed there, not forgetting the *Berberries*; and these may be all kept within sufficient bounds, so that the small-flowering plants to be introduced amongst them may all flourish and flower in their respective seasons, and the shrubs above will serve to break the outline in winter, when the bulk of the flowering plants are only level with the ground. We will, hereafter, dwell more particularly on this department, but at the present time will say that all the hardy herbaceous flowering plants numbered in the accompanying lists will do well on rockwork, except those which are higher than a foot or eighteen inches.

Returning again to the Flower-garden, I may say, that in the arrangement of flowering plants there is a matter open to much comment. The rage for bedding plants of the half-hardy kinds is certainly subsiding; and the means of the amateur not allowing him to provide many, I would certainly advise the beds to be planted with the hardy herbaceous ones mentioned below, with here and

there a patch of annuals sown amongst them likewise; and if a few bedding-out plants can be had, they might also be allowed good places amongst the rock, but beds naked from October till May cannot be tolerated in the small garden to which this chapter is directed; and probably, if it be a very small one, the whole of the plants enumerated below will not be able all to get places; and as it is imprudent to plant any of them nearer each other than eighteen inches, and the taller ones two feet or more, the cultivator will be able to know how many he can accommodate. Of course, in planting, care must be taken to have the back row in long continuous borders, or the centre in beds of the tallest plants, and the dwarfiest at the edge, as the Primrose, Hepatica, Anemone, Polyanthus, Auricula, Alys-sum, and many others, as well as the Crocus, Snowdrop, &c.; and if here and there a place be left for a Geranium, Calceolaria, Cuphea, and the like, they will add materially to the variety in autumn. Calceolarias, of the shrubby kinds, may be kept with very little trouble all winter. I think I have some two or three thousand that never saw the sun from the beginning of December till the last week in February; and for more than a month never saw daylight; and yet there was very little loss amongst them, and the plants now look middling well; but as these cannot be had now, the amateur must content himself with obtaining a few plants at the proper time, and planting in his garden for stock to propagate from in autumn in the way which will be explained hereafter:

The accompanying list of herbaceous plants may be extended at pleasure; but as it contains nothing but what is good, it will do for the amateur to begin with, and as everything is hardy, and of easy culture, there need be no fear of their succeeding.

HARDY HERBACEOUS PLANTS.

Arabis verua	Eranthis hyemalis
Anemones, of sorts	Oenothera speciosa
Aquilegia glandulosa	" fruticosa
Alyssum saxatile	Fraxinella
Aconitum virginicum	Geum splendens
" speciosum	Golden Rod
Aubrietia deltoidea	Iberis Gibraltica
Aster amellus	Helianthemum cruentum
" elegans	Helianthus (dbl. Sun-flower)
" spectabilis	Hesperis matronalis (double white and purple Rocket)
Anchusa carnea	Hepatica (double and single blue, purple, pink, and single white)
Antirrhinum, of sorts	Helleborus niger
Betonica striata	Lychmis (double scarlet)
Batchelor's-button, dbl. white	" fulgeus
" yellow	Linum flavum
Caltha palustris (Marsh Marigold)	Lathyrus verna
Campanula persicifolia	Lobelia fulgeus
" glomerata	" erinus
" latiflora	" propinqua
" pyramidalis	Liatris spicata
" nobilis	Lupinus polyphyllus
" grandis	" alba
" garganica	" grandifolius
Catananche cœrulea	Mimulus cardinalis
Carnation, of sorts	" Conductor
Dielytra spectabilis	" other varieties
Dodecatheon elegans	Ononi rotundifolia
" media	Pentstemon gentianoides
Delphinium azureum	" alba
" grandiflorum	" coccinea
" Epsii	" ovatum
" Barbourii	" veuustum
Dianthus aggregatus plena	" Scouleri
" splendens	" azureum
" patens	Potentilla formosa
Eriurus alpinus	" McNabbiana
" montanus	
Epimedium violaceum	

Prunella Pennsylvanica	Rudbeckia hirta
Pulmonaria cœrulea	Ranunculus acris (dbl. yellow)
Pyrethrum Parthenium flore pleno	" aconitifolium
Primula farinosa	Symphiaudra pendula
" all the varieties of	Silene pendula
Polyanthus and Primrose, as well as Auricula, &c.	" Schaffta
Pœony, of sorts	Spiræa filipeudula—plena
Phlox—Brilliante	" japonica
" speciosissima-rubra	Stachys coccinea
" odorata	Saxifraga hypnoides
" verna	" tridactylites
" Van Houttii	" granulata plena
" Broughtonii	Trollius Europeus
Pansy, or Heartsease, of sorts	Veronica spicata
	" gentianoides
	" ovata purpurea
	Wallflowers (single & double)

BULBS.

White, Tiger, and Turk's-cap Lilies; Narcissus, of sorts; Daffodil; Snowdrops; Crocus, of sorts; Fritillaria; Tulips, of sorts; Single Hyacinth; Crown Imperial.

FLOWER-GARDEN CALENDAR—APRIL.

If the beds and borders were all carefully dug over last month, and the places of each correctly marked, there will be little wanted now beyond preparing for what additional plants may be intended to put in next month of the more tender kinds, as Verbena, Geranium, Calceolaria; for some of these, however, and Dahlias, the earth must be improved by a foot of the old taken out, and fresh brought in, unless it be already very good. Annuals may also be sown in patches, which ought to be thinned as they show themselves; and cuttings of some plants may be put in towards the end of the month, as may be wanted. The *Dielytra spectabilis* is one of the most handsome plants we have, and the old wood, after flowering, cut up into lengths, makes excellent cuttings; while there is great advantage in having early slips of Heartsease, Alyssum, and the like; they strike so much easier than later in the season; but next month will do. Supposing all the hardy plants all in their places, the work of the present month will be merely routine, keeping the grass and walks in order, and everything else in that nice condition which enhances so much the beauty of a place, whether great or small.

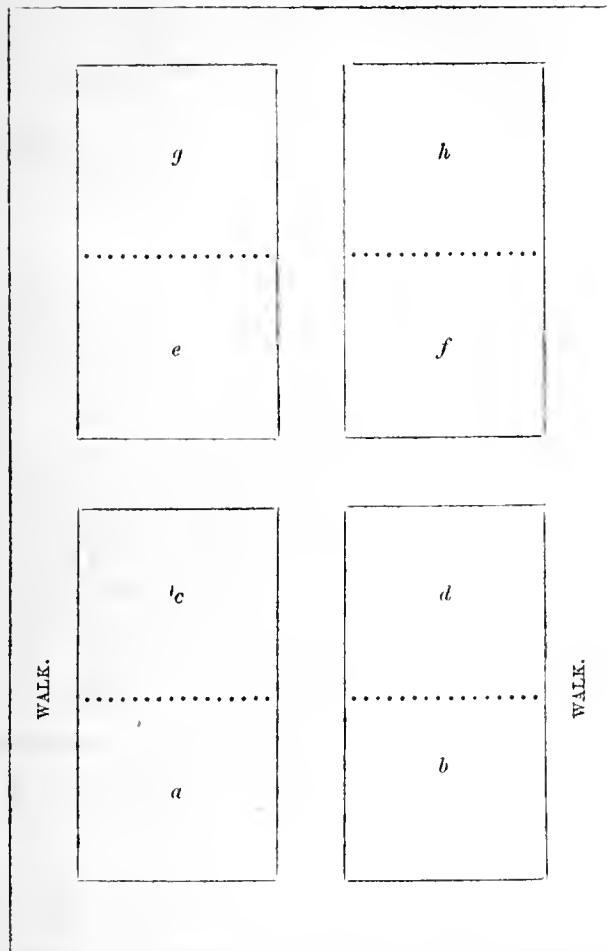
KITCHEN-GARDEN — APRIL.

a.—This being mostly *Strawberries*, with a few *Raspberries* in a line between this division and c, but little is wanted doing now, as we expect the digging, or rather slightly pointing with a fork between the rows, was performed last month, as well as the pruning and tying-up of the Raspberry-canes; but little will, therefore, be wanted until the runners begin to make their appearance, which will not be this month.

b.—A part of this may be planted with *Cauliflower*. If it was not done at the latter end of last month no time must now be lost. The same may be said of *Potatoes*; as we advise only a few to be planted for home use in summer, an early sort is preferable. A space may be left in this compartment for another row, or more, of *Cauliflower*, to be planted out next month, but with that exception the whole may be now planted.

c.—This, like a, being under permanent crop, consisting of *Asparagus*, *Sea-kale*, *Globe Artichokes*, and *Rhubarb*, will require putting in order for the season; the top soil of the *Asparagus-beds* ought to be broken very fine by the first of the month. *Sea-kale* that has been covered up with dung in the forcing way, and done its work for the season, will

require to have the ground neatly dug; the dung being used elsewhere; and the same may be said of the *Artichokes* and *Rhubarb*; because, being in proximity to the *Sea-kale*, they are sure to want a similar digging-up at a season when everything is expected to wear an air of neatness.



d.—*Onions* being recommended to be sown on this plot, it would be well to sow some *Radishes* over the ground likewise; but, supposing this to have been done last week, little remains to be done now, save to take the advantage of the plants getting-up, and stirring the soil between the rows. Watch that birds and slugs do not destroy the young brood, the *Radishes* being more likely to suffer than the *Onions*.

e.—Sow *Peas* twice this month; the *Champion*, or *Surprize*, being the best. Remove any waste *Greens*, or cut *Brocoli*, and dig the ground well, adding manure from the *Sea-kale* plot *e*; and stake the earliest crop of *Peas*, as well as all others, as they come on.

f.—This being vacant, and destined for *Dwarf Kidney Beans*, and their tall brethren, the *Scarlet Runner*; two or three rows of the former, and one of the latter, may be put in about the middle of the month; it is better not to be too hasty with these delicate plants. Another sowing may be made at the end.

g.—This will require much doing to. *Early Horn* and *Long Surrey Carrots* may be sown early in the month; and *Red Beet* at the end of it. *Broad Beans*, for second crop, may also be planted towards the end of the month; and a space left for another sowing a month afterwards. Stir the ground between the *Beans* that are advancing; and thin *Parsnips*, as soon as they can be handled, to about eight inches apart.

h.—A bed of *Turnips* may be sown here about the middle of the month, and, probably, some other odd crop, which the wants of the family may suggest, may also be sown, or planted here, which is not enumerated in the above, or contained in our general feature of this and other departments.

BORDERS.—Sow the late kinds of *Brocoli* recommended at page 401, on a nicely-prepared bed, labelling each; as likewise a little *Cauliflower*, *Lettuce*, and one sort of *Cabbage*; *Savoy* and *Brussels Sprouts* we suppose to be sown last month. *Celery* must be sown in a warm corner; and if under glass all the better, not later than the first of the month. Sow also *Sweet Marjoram* and *Basil*; and give a dressing to beds of herbs, as *Mint*, *Sage*, *Tarragon*, *Thyme*, and other things. Cover up *Potatoes* by some homely protection at nights; and stir the earth between them and other things. If there be *Peach* and other fruit-trees against the walls, some covering then will have been required; it may generally be discontinued about the first week in May, taking it off in dull, mild weather. Keep all things in good order, including the walks and their edgings.

FRAME.—Supposing there to be a single frame and lights for *Cucumbers*, it ought to be at full work now; for, apart from growing *Cucumbers*, an active hand will have every inch of it not occupied by runners doing duty in the way of striking cuttings of *Dahlia*, *Verbena*, *Petunia*, and other summer-flowering plants, as well as in bringing some other things on. Pots of seedlings may also be placed here. In fact, a *Cucumber-frame* ought to be quite full all this season. Care, however, must be taken not to introduce anything into it likely to encourage disease or insect. A strong decoction of tobacco will kill all insect life by the cuttings being well immersed in it before putting in; that I have used in a *Cucumber-frame*, at times, with impunity.

J. ROBSON.

ALLOTMENT FARMING FOR APRIL.

THE April of this year will be a busy month in the allotments. The ground in January and February was entirely given up to the dominion of King Frost, who bound it in his icy fetters, and defied the interference of man during his unusually severe reign. With a change of weather came the bustle of farming and of gardening operations, and what in other seasons would have extended over four months is now confined to the spring season of March and April. Therefore, it is necessary to be up and doing, and whatever was left unfinished in the instructions for March should be done without delay. The hoe should be kept actively employed at all favourable opportunities, for the destruction of weeds, and to encourage a rapid growth of the crops.

BRUSSELS SPROUTS

are a useful vegetable and productive crop that is now being more generally cultivated, as its wholesome qualities and hardy nature are better appreciated by cottagers. A small quantity of seed sown about the middle of the month will give sufficient plants for the cottager's purpose, to be transplanted between rows of *Potatoes*, *Scarlet Runners*, or *Peas*, in short, it will grow well in situations generally considered unfavourable. It is usual to cut off the tops about a fortnight before gathering from the stems. At *Brussels* they are served at table with a sauce composed of vinegar, butter, and nutmeg, poured upon them hot after they have been boiled.

RHUBARB

is also a delicacy that is becoming a favourite with the

million. The seed should now be sown in drills fifteen inches apart, and, when fit to thin, to be left six inches from plant to plant until the autumn, when they may be finally planted in rows two-feet-and-a-half square, in good, rich ground, trenched eighteen inches deep. By placing over them deep, large pots or boxes, hampers, or hoops of hazel sticks to support a mat, or, in short, anything that will allow space for them to grow, and to exclude the light and frost with leaves, dung, or any other litter at hand, they will produce a good crop of blanched footstalks earlier than in the open ground. A few old roots cut up into pieces, with an eye to each, and planted the early part of the month, will be fit for blanching twelvemonths before the seedling plants.

SEA-KALE.

This is another vegetable possessing many wholesome properties, but seldom or never seen in the allotments or cottager's gardens. Why it should be excluded from such places is connected with an idea that it is only suitable for the tables of the rich, and that it requires particular care and attention to bring it to a high style of perfection, and then to be served up in a proper manner with suitable sauce, and all the other good things that are seen and enjoyed at a reut-day dinner. No man is supposed to relish a dish of turtle-soup with such exquisite delight as an Alderman; why it should be so is natural; we are all the creatures of habit—a taste is acquired, and luxuries are enjoyed. Although we would not encourage expensive luxuries, we would commend to our allotment friends the cultivation of a little Sea-kale. If the seed is sown early in the month in drills about two inches deep, and one foot from row to row, thinned out to six inches apart in the row, they will be fit next spring to be permanently planted in patches, three together in triangle form, each being six inches apart, and two feet from each other in the row, where they can be blanched any time during the following winter, or early spring, in the same manner as recommended for Rhubarb.

CELERY.

A little seed should now be sown thinly in any warm situation, and slightly covered with soil; when the plants are two or three inches high, they should be transplanted six inches apart into a bed composed of well-rotted dung, six or seven inches in depth, on a hard bottom, in a sunny situation, where they form a mass of fibrous roots. When they are six or eight inches high, they can be safely and finally transplanted into trenches or beds. *Seymour's Red* and *White* are good sorts.

BROCOLI.

Although with some kinds twelvemonths are to pass away before the produce is fit for the table, nevertheless, there are others that require only four or five to bring them to maturity, by which a succession of this useful and delicate vegetable is continued for eight months, from September to May. A sowing to be made about the middle of the month of the *Purple Cape* and *Grange's Early White*, and another about the middle of May; the first sowing to be transplanted the early part of June, and the plants of the second sowing to be transplanted the latter part of the same month, will give a successful produce from September to Christmas.

The *Early White*, treated in the same manner, is fit for use from November to February. *Early White Cape* sown this month is fit for the table the first week of March; and from a June sowing, a successional supply is continued to the beginning of April.

New Edinburgh Early White, treated like the others, with its cream-coloured heads beautifully garnished by its surrounding green leaves, are in maturity during the month of April.

The *Impregnated Early White*, sown and transplanted at the same time as the others, comes into use in March and April; the colour pure white.

Somer's New Hardy Dwarf, a fine white, sown as detailed above, produces a succession to the *Impregnated Early White*, and continues it to the end of May. But the *Walcheren* is the best of all. For a successional supply

of this invaluable Cauliflower-like Brocoli, it is necessary to make sowings the latter end of this month, the middle and end of May, the middle and end of June, and the middle and end of July, which will give a regular supply to the end of the year.

Radishes, Lettuces, Peas, and Beans. Successional sowings should be made to keep up a regular supply.

Savoy, Borecole, and a few Cabbage seeds should be sown about the end of the month in any warm corner of the allotment or garden. These useful and hardy vegetables are so well known and appreciated for their good qualities, that any further particulars on their cultivation are unnecessary.

Slips of *Lavender, Sage, Thyme*, and all such things, may now be put in, in any shady place, when they will soon strike root.

CULTURAL PRINCIPLES.

As agriculture is now receiving the best attention of all classes, from the prince to the peasant, it is a subject worthy of enquiry to know how far the principles of gardening could be extended to the farm. The improved cultivation now being adopted, is to be ascribed to the practices suggested by the superior management of gardens. That many farmers have failed in their laudable endeavours to adopt improved practices is nothing wonderful, when we consider how ill-prepared the soil generally is to do justice to any improved method recommended by such men as Mechi, Davis, and others, who have extended the principles of gardening to farming operations, by deep draining, deep ploughing, manuring, and minutely commingling of the soil. Without attending to the proper preparation of the soil, it is unreasonable and unfair to decry a system because it does not adapt itself to all soils, like quack medicines,—a panacea for all the ills that land is heir to.

Let us see how the gardener cultivates his ground; deep diggings, and sometimes trenchings eighteen inches to two feet deep, are given before a crop is planted. Gardeners stand the good effects produced by stirring soil to a good depth. The spaces between plants on the surface are left for the atmosphere to surround them with its invigorating influence, and the roots have depth of soil to range more freely for the supply of food.

At the spring-time of sowing, when I first paid attention to the system of farming adopted in one of the first agricultural counties in England, it really astonished me to see the large, rough clods of earth shining forth from the plough-share, and as hard as brickbats; in a few days more it was sown with corn, and over went the harrow, tearing some up and reducing others to a medium size. Wishing to know what became of the seed in such a rough bed, I found some on the surface, and others very near the surface, and quite close to that could be picked up a handful three or four inches deep, that lodged in the openings between the clods of earth. I then saw the reason why farmers sowed five or six bushels of corn to the acre. What was left scattered on the top was picked up by birds; the seed covered over by heavy clods may sprout, but would be too weak to break through its sepulchre, and the quantity buried in the large clods, and then covered over, would never see the light. It is only the small portion that may have been favoured with a good bed, and properly, or nearly properly, covered up that vegetated, and then began the struggle for life in such a soil. No wonder that only three-and-a-half quarters is the average produce for every acre in that fine county.

TRANSPLANTING CORN.

In some of my trials of farming experiments, I have transplanted Oats, Barley, and Wheat, from the seed-beds, about the end of this month, or the beginning of May, in showery weather, with the best results. Wheat transplanted, one foot square, produced six quarters per acre, weight 61lbs. per bushel. By their sowing or transplanting crops in the allotments, the plants have free access of sun and air to throw out tillers, or side-shoots, the straw will be more firm and mature to resist high winds and heavy rains, and the quantity and quality of the grain much increased and improved. Upon investigating the subject on the principles

of vegetable physiology, it is found, that in proportion as a plant is allowed to expand itself to its natural state will its size and productiveness be increased.

When Turnips were first cultivated in this country, being left only a few inches apart, they were supposed to produce good crops. With experience came improvements, progressing to the present time, when thirty inches, row from row, is not considered too much for them; Mangold Wurtzel and Potatoes the same. Peas, Beans, Carrots, Parsnips, fruit-trees and forest-trees; in short, everything vegetable are influenced by the same laws of nature. Withhold from them the proper space to grow and to expand themselves to their natural state and they become puny and unproductive.

The sowings of *Oats*, *Barley*, and *Clover*, must now be completed as soon as possible.

MANGOLD WURTZEL

succeeds best in good, stiff land, which had been well worked and dunged at the time of sowing, and thrown up into ridges twenty-six inches apart, into which the seed, about the middle of the month, should be dibbled twelve inches apart. The *Orange Globe* is a good sort, the cattle prefer it, and it yields as large a crop as any.

BELGIAN CARROT.

Five pounds of seed, mixed with a couple of bushels of sand, or ashes, will be sufficient to sow an acre in rows fifteen inches apart. A little *Oats* scattered along the drills will spring up before the Carrots, and point out the rows for the early application of the hoe as soon as weeds appear.

The following memorandum I kept to prove the profits on an acre of Belgian Carrots grown, under unusually disadvantageous circumstances, in a rough piece of ground, where large trees had been felled, and which will account for the great expense of cultivation &c., incurred.

	£	s.	d.
Digging eighteen inches deep one acre . . .	10	0	0
Seed and labour sowing it . . .	1	10	0
Thinning and hoeing three times between the rows	1	2	6
Taking up, sorting, and pitting the same . . .	1	7	6
	<hr/>		
Tons cwt.	£	s.	d.
7 15 at 50s per ton . . .	19	7	6
0 11½ at 45s do . . .	1	5	4
1 0 at 40s do . . .	2	0	0
	<hr/>		
	22	12	10
	<hr/>		
	£22	12	10
	Profit	8	12
		10	

W. KEANE.

NOTES FROM PARIS—No. 9.

THE UNIVERSAL EXHIBITION.

THE building of the Universal Exhibition here is remarkable for its strength and lightness; while, as might be expected, no pains have been spared to make it worthy of the reputation of Parisian artists as far as regards embellishment and ornament. The general design has but little which resembles its great prototype of Hyde Park, except the roof, and even that, though all glass, does not present anything like the grand proportions of Paxton's transept. Nevertheless, there is no want of dazzling splendours, chaste outlines, or beauties, in the *Palais d'Industrie*, which has evidently been erected for the benefit and admiration of a future generation as well as the present.

The façade, nearly in the form of a pentagon, is built of massive blocks of a sort of free-stone, which is found abundantly near the capital, and which is both durable and easily wrought. At the side-angles are groups of figures, with fruits and flowers in cornucopias; also various instruments used in the arts and sciences. In the centre, or upper-angle, is a group of much larger figures, the principal of which is a female in an erect posture, and with the arms extended on each side, as if holding out crowns of honour to genius and industry. This fine group, however, is not yet completed.

But, apart from the building itself, the approaches to it,

and the immediate vicinity, although it is but little removed from the centre of Paris, will be very different indeed from the neighbourhood of Rotten-row; for the wretched hovels that formed so great an eye-sore in the approaches to the original Crystal Palace would not be suffered to exist here. Happily, or unhappily, we do not say, but only note the fact. All the approaches to the Exhibition of Paris are entirely in keeping with the magnificent building itself; and whatever rout is chosen, the visitor will be gradually prepared for the gorgeous spectacle that will meet his view in arriving at his destination. One way or another, he must pass fine buildings, sculptures, and fountains, or go through the ancient garden of the Tulleries, with its stately trees and statuary. The *Place de la Concorde*, in itself an exhibition, will lead him to the grand avenue of *Champs Elysée*, the noble *Arc de Triomphe* in the distance, and innumerable trees on each side, under whose shade he will be glad enough to retreat from a warm summer sun. The ground immediately in front of the building is to be laid out as an ornamental garden. For this purpose, some scores of fine old trees have already been cut down, and others are marked for destruction; and the fine weather which is now set in will enable the men to proceed rapidly with the work of forming the ground on each side of the entrance. The two plots, or clumps, will extend the whole length of the building, that is to say, of the façade, and will be about thirty yards each, by eighteen yards wide. These plots will be laid out in flower-beds, and grass in the form of walks, though most likely they will only be trod by the men who shall have the care of keeping them in order. The beds are to be bordered with ivy, which is much used here as an edging, and looks very well when kept neatly trimmed. In the centre, that is to say, the centre of the principal entrance, is to be an oval basin, about twenty yards long and four yards wide, having a fountain playing in the middle. The ground thus laid out will be enclosed by a low parapet stone wall, and a railing ornamented in the style common in the seventeenth century, and commonly called the style of *Louis Quatorze*. The plan of the ground and incidental works has been furnished by M. Alphante, and the whole is to be completed under the immediate superintendence of M. Mason, a landscape-gardener of some considerable note here.

A new avenue is to be opened at the east side leading to the river, and this will require the removal of a few more trees. A wide pavement, formed like most pavements in Paris, of asphalt, is to be carried all round the building, which will also be protected by an ornamental railing.

In addition to the Horticultural Exhibition, which I noticed in my former communication, a separate Exhibition of a strictly agricultural nature has been decided on, and this will be held on a plot of ground near the *Champs Elysée*. This will, it is expected, be something in the way of the annual gatherings of the Agricultural Societies of England and Scotland, including poultry of all kinds; and, of course, being universal in its operations, it will be open to the societies of other countries. I have reason to believe, that if the efforts of the commissioners are properly seconded, this will prove an Exhibition of the greatest interest to a vast number of people who will arrive from all parts of the world. For, in reality, what do the inhabitants of Great Britain, for instance, know of the agriculture of this large and fertile country? What do they know of French horses, oxen, cows, pigs, poultry, crops, or implements? Still less do the French know of the high-farming of England, or Scotland, or Ireland. It is fit, therefore, that France should measure her strength in this particular with other nations; that she should ascertain her real position; that she should give other people an opportunity of forming an idea as to whether she is a first power in agriculture, as she undoubtedly is in art and arms. The want of such an Exhibition in connection with the great gathering of 1851 was a mistake which the French will correct in 1855, and it will be seen, that though the farming of France is, like everything else that is French, strongly marked with peculiarities, still there is much that may be profitably imitated by the people of other countries. There may not be such fine breeds of horses, cows, sheep, or pigs, as are to be found in the fertile valleys of the western islands, or in the equally fertile plains of the St. Lawrence, and the

Mississippi; but still, the visitors who come here from any of these parts cannot fail to see many fruits, vegetables, or roots, which are either new to them, or also used in a manner of which they had no idea. They will see many implements, machines, and mechanical contrivances, which will afford valuable suggestions.

But though this will prove an excellent feature in the approaching Exhibition here, I see no reason to conclude that so good an opportunity of making everything complete will be used to the best advantage. Shall we have, besides the models of farm carts, waggons, and machines, also models of farm-buildings, farmer's houses, &c.? Shall we have lectures in French and English on the present condition of agriculture in France? Shall we have statistical reports relating to farming and the condition of farm labourers? Shall we have draining works in operation, and experiments with reaping machines, among a people who have scarcely heard of the one, and practically know but little of the other? These are questions which it is, at present, difficult to answer, and it is to be feared they will only be answered negatively at a future time. We must be prepared for less than this, though the very least we can expect must prove what we call "a fine turn out."

The Horticultural Exhibition will admit of much easier management, and will be a really splendid affair; for though it is not probable that the French gardeners will produce anything to rival the examples of plant-growing, as seen every year at Chiswick, or the Regent's Park, they are certain to excel in rich collections of fruit; while it may be safely affirmed, that those who have the getting up of such Exhibition here will supply any defects in culture, by arranging the different objects in the most attractive and telling manner. All who have any experience of flower shows will readily understand the importance of this point. During the first six or seven weeks there will be no lack of display in flowers and plants, dried specimens, drawings, and everything else that can interest the gardener or botanist. Then will come the rich collections of fruit from the provinces and the southern departments. It is probable that the pharmaceutical interest will also be represented in the horticultural division; and as in France all medicinal herbs and plants form the popular remedies in all physical ailments, the display in this department is likely to be extensive. Preserved fruits and vegetables will also probably belong to the same part of the Exhibition; but in any case, the display will be very interesting; for the French show great taste and skill in the preservation of fruit, such as Plums, Apricots, Cherries, Peaches, Pears, and other esteemed sorts.

It cannot be doubted that the commissioners have wisely decided to have the Exhibition of horticultural products in a separate place. In a building where painting, engraving, sculpture, and the higher industrial arts, or new inventions abound, it is not likely that plants and flowers, fruit and vegetables, would receive the attention to which they are entitled. We all recollect how the sculpture room and other courts of the Crystal Palace were crowded to suffocation every day, while the several rich collections of flowers and plants were scarcely noticed among the multitude of more dazzling objects. We cannot complain of this, for everything has its sphere; flowers and plants in a garden, or greenhouse, are where they appear to the best advantage; we seek them there, and give them the first place in our estimation so long as we are among them; but so soon as they are removed to a strange situation, among heavy machines, rich fancy articles, or broad masses of brilliant colours, in furniture, tapestry, or other objects of art, then we lose sight of them, their charm ceases, because their quiet, simple beauties are over-balanced by more striking, if not more captivating competitors.

PRESERVED VEGETABLES.

The art of preserving vegetables, too, has been much improved and facilitated since 1851, when it was first publicly noticed in England. At that time, M. M. Morel and Fatio were the only persons mentioned in connection with this important discovery. But, in the interim, several competitors have come forward to claim a share of applause, and they have shown that they are not unworthy of it. Every grocer here sells preserved vegetables, which, though dry

and withered morsels in the shop, become, after being placed in hot-water a few minutes, as fresh as if they had just been brought from the ground. The cost of such vegetables is not more than a shilling a pound, and two ounces are quite sufficient for one person, who may thus, for about 1½d, have a most nourishing and substantial soup without any trouble or preparation, and with only half-an-hour's boiling. The French pound is about half-an-ounce more than the English. Vegetables prepared in this manner are commonly called *julienne*; and during the present winter it has been but too difficult for poor people to obtain as much of the common vegetables as would make soup for a single man for the same money. In ordinary times, however, and especially in summer, *julienne* is not so cheap as vegetables prepared in the usual way. But it makes a great saving of time for those who have more important things to do than cutting green carrots and turnips; for most persons know that to prepare vegetables properly for any kind of soup some little time is required, and a good deal of messing is inevitable. *Julienne* has also the merit of being composed of a more than usually varied assortment of the most wholesome kinds, including Cauliflower, Celery, and a few fragrant herbs. It is now a very easy matter to have Peas on one's table on the first of May, or any other day, and as sweet and green as if but the first crop of the garden. Vegetables may now be stored away in lofts, or granaries, to any extent desired, and with the certainty, that if brought to the table twelve months after, they will be as fresh and well-flavoured as if only just gathered. The art of preserving them is, therefore, a discovery of the very highest importance, and we may look forward to the Exhibition for some illustrations as to the advantages which it possesses, and the improvements of which it is susceptible.

PRESERVING MEAT.

In connection with this topic I may mention, that there has, very lately, been introduced to public notice, a process of preserving meat, either raw or cooked, for any length of time without salt, and without subjecting it to drying, as is done with the vegetables. If this statement is fully borne out by facts, such a discovery will be productive of immense advantages, as large stores of wholesome animal food may be kept for a long time, and conveyed from one part of the world to another as readily as barley and oats. Thus the beef and mutton of America and Australia may be supplied to all the markets of western Europe. The new process is said to be exceedingly simple and complete. The meat is first cut into small portions, and these are immersed for a short time in a liquid which is obtained from the meat itself. What this liquid is, or how it is obtained, we are not told; but it would appear to form the secret of the discovery. After lying a certain time in the liquid the meat is hung up to drip, and the liquid which remains on the surface (of the meat) becomes a tough jelly, and, ultimately, forms a covering so firm as to exclude both air and moisture. The coating thus formed may be considered as a perfect hermetically sealed envelope, similar to that of Indian-rubber; but in a high temperature it dissolves and forms part of the food. The meat may, therefore, be packed in boxes, or hampers, or stored away without any other protection. All this seems very promising so long as our speculations are confined within a certain latitude. After that I fear the charm dissolves; for it is not so clear that this discovery will be of any use in tropical climates, if the very principle on which it is composed becomes impossible. On the other hand, the inhabitants of tropical climates eat little or no animal food, and, therefore, are not likely to avail themselves of it. But that such a discovery may not admit of universal application, is not likely to make it less valuable to the inhabitants of cold and temperate climates.

FLOWER MARKETS.

As the fine weather has now begun to set in, the flower markets are rapidly resuming their wonted gaiety and bustle. Vast loads of fruit-trees, evergreens, plants, and roots, are brought into Paris every other day to be sold on the Boulevards and along the quays; and now people are setting their balconies in order, looking up their old pots, or

trimming their flower-borders. Respectable *bourgeois*, or rentiers, in their dog-carts and gigs, may be seen every day returning to these snuggeries, a few miles out of town, or in the suburbs, with the long-desired addition to their horticultural riches, with which they are likely to astonish their neighbours and gratify their friends. Now it is a bundle of Gooseberries, which have always a wicked knack of always getting too close to the old gentleman as he jogs along over the uneven roads. Now, it is a dozen of riders, which it difficult enough to manage among a crowd of tradesmen's vans, carts, railway waggons, and omnibuses, for their owner, quiet, easy man, having been so much occupied with other matters, and, perhaps, a little confused with the bustle and noise of Paris, has quite forgotten to have the branches tied in, or to place them at the back instead of in front. He must look well before him, or it is very likely some of them will be broken before he reaches home. There is a gentleman who has a neat villa with a small garden, about two miles beyond the barrière on the Vincennes road. He has brought his lady to have a look at some of the new patterns, and he now resolves on taking home a decided bargain in Cherry-trees and miscellaneous plants. His servant man behind, in charge of the precious consignment, is wedged in between Berberry bushes and Laurestines. Some Gooseberries are hung out behind; the box underneath is stuffed with young Cabbages, Polyanthus, Primroses, and Daffodils. Right over head rises a dense mass of branches, about seven feet high, and which, were the atmosphere not very calm, would form a sore drag for the little horse in harness, if, indeed, it did not lift him altogether off its feet. Here is a poor woman who lives at the eighth stage. She makes trowsers, and can earn twenty sous a day, besides paying for the ironing-fire. Her husband is out all day, and she has but little society except her flowers, which she watches over with tenderness and unwearied assiduity. She is come out to buy a stock of fresh earth for her window-garden, and she is trying to elicit some information from the woman with whom she deals. She tells her how that charming *Fuchsia* which she bought of her last year is still alive, and that it is now beginning to break into leaf again; how *magnifique petit Oranger* has been rather sickly for some time, owing to too much confinement and want of light; but, now, with a little nursing and fine weather, she hopes soon to have it again convalescent. Her Hyacinths are flowering *pas mal*, and thinks she has discovered in her Rose-bush, *une superbe quatre saisons*, some slight disposition to bud, a circumstance which makes her very happy. There is a little point on which she has been troubled with some misgivings, and she mentioned it in the tone of humble inquiry;—that is, as to whether it may not be too soon to sow Scarlet Runners.

Here, now, are two young ladies, in *grand tener*, just alighted from a carriage, and after whom all the flower girls within sight are straining their eyes, as eager to scrutinise their toilette as to obtain their custom. They are evidently in search of bouquets. But it is chiefly in the shops of the *Passages de l'Opera*, or the *Passages des Panoramas*, or along the Boulevards, that bouquets which belong to the *distingué* category are to be had. Those in the open markets are pretty enough, but they are not at present made up of rich and varied materials such as are seen in the shops, where we find choice Camellias, Azaleas, Ericas, Rosos, Hyacinths, Lilae, Cyclamens, Cinerarias, and Acacias, besides Van Thol Tulips, Crocuses, and Narcissuses. The common bouquets at present seen in the open market are chiefly made up of Crocuses, Neapolitan Violets, and Lilae intermedial with broad circles of moss, and Roses half-expanded, and remarkable for their rich vermilion colours.

"Only thirty sous for that *jolie bouquet* Mademoiselle." "Combien, thirty sous?" The young lady opened her purse, and is about to put down the money, just when her companion has taken it into her head to smell the Roses, and "Tiens! Clementine, they are not real, but only artificial;" and such is the fact, though the counterfeit would hardly be suspected.—P. F. KEIR.

QUERIES AND ANSWERS.

GARDENING.

SOIL FOR BRUNSVIGIA JOSEPHINÆ AND PELARGONIUMS.

"Will you oblige a constant subscriber by informing him what soil is best suitable for growing the *Josephine Lily*? I have four plants, which I have grown in pots this last five years, and got them to bloom only once, which was last year. Also, I wish to know the best soil for growing *Pelargoniums*, as I have a desire to exhibit them this summer.—W. S."

[The best soil for growing the *Josephine Lily* is strong, yellow, friable loam, without any mixture whatever; the drainage to be perfect, the pots comparatively small, the loam to be put very firm in the pot, and round the bulbs, and not to repot or disturb the bulbs oftener than once in seven or ten years. The great art is in the management of the leaves from the middle or end of January till the middle or end of May.

The very same kind of loam is best for prize *Pelargoniums*, say two-thirds of it, and one-third very rotten, old, dry dung, without worms, and to every peck of such mixture, add a little over a quart of best white sand; but the exact quantity of sand is a mere guess, as the sandy or no sandy character of the loam guides the quantity of sand for the mixture. If you are in earnest about "exhibiting" them this summer, recollect to make it a private exhibition, if you did not know the compost for them before now, and for this reason, that every *Pelargonium* intended to be exhibited for a prize this season has been in the proper soil long ago. You ought to have had all your wits about you as far back as last August for the mere potting, and twelvemonths longer to get turfy loam mellowed down.]

EVERGREEN HEDGE—SOWING MISTLETOE.— MUSHROOM-BED IN A SHED.

"I wish to plant against a paling, six feet high, some hedge that will be evergreen, and that the cows will not in the winter nibble. I cannot have any protection by way of iron-fencing, or wood rails, to keep them off, therefore, what am I to do? *Ivy* will not do, and *Holly* is too expensive, and too slow-growing.

"I have some *Mistletoe seeds*; may I put them in the bark of *Pear* and *Apple* trees?

"I wish to make a *Mushroom-bed* in a spare shed. Will you direct me?—CYNTHIA."

[There is not a plant, evergreen, or otherwise, which cows will not either nibble at, or toss about with their horns, or trample under foot, if unprotected, until it is too strong for them to destroy. Young *Hollies* would be no more safe than young *Laurels*; but *Holly* is the only fit plant for your case—say plants not under three feet. The only other alternative, and a very poor one, is to smear the fence with some sort of cheap green paint.

Now is a good time to insert *Mistletoe-seeds* in the bark of Apple, Pear, Thorn, and Poplar trees; on all of which it will take with equal facility. It "takes" best on three-year-old branches. Open a slit as for budding, but not quite as far into the wood; that is, let there be a thin film of bark between the seeds and the wood. The natural way is for the birds to drop the seeds in cracks in the bark.

After the dung is prepared, the *Mushroom-bed* may be made four feet wide against the wall of the shed, just in the shape of a Cucumber-bed, or sloping to the frame, but not quite so much as a hotbed; but in truth, the shape has nothing to do with it, nor the size, nor the thickness, nor the mould that is put over it. The whole art in getting good Mushrooms lies in the preparation of the dung, in ramming it into beds, and in the atmosphere in which the Mushrooms rise. Nine-tenths of cultivated Mushrooms are spoiled by the place, or the air, being too dry for them.]

MANGLE'S VARIEGATED AND OTHER PELARGONIUMS.

"Will you be so kind as to inform me what was the origin

of the *Mangle's Variegated Geranium*? I have some seedlings from it, curious-looking things, very unlike the parent.

"Will you also be so good as to tell me if the inclosed leaf is *Pelargonium denticulatum*, or *dentatum*? I saw a plant named *Pelargonium crassicaule* at Kew; but I think it was wrongly named. I fancy it was the old *Gibbosum*. I am happy to say *Moore's Victory* is still in existence; I have a plant of it.—W. T. B., *Esher*."

[*Mangle's Variegated Geranium* has been hitherto looked on as a natural sport from a thin-leaved Horse-shoe pink species, which will not interbreed with any other known species, as far as we have heard. Your seedlings will only reproduce the original species; but the flowers may be a little larger, and more given to seed than the old one. That has been our experience; but if you will send a leaf, or leaves, to Mr. Beaton, he may be able to tell you if you have got into a different strain.]

The leaves of *P. crassicaule* are in the way of *Gibbosum*; but no one could take the one for the other. We have seen *Crassicaule* at Kew. *Moore's Victory* is not scarce, except in some localities. The leaf you inclose is far more like *bipinnatifidum* than *denticulatum* or *dentatum*; and yet your plant is neither the one or the other, but a much better-looking one. Probably one of those varieties which Mr. McIntosh once delighted in when he lived at Claremont; but we incline to think it what is commonly known as the *Carrot-leaved*.]

HEATING BY GAS.

"I have just tried heating my hot-water apparatus with gas. It is a failure, and expensive. I have, therefore, had a pit erected inside my greenhouse, to be heated with an apparatus as enclosed sketch; so that I can still make use of the gas. The pit will be filled with tan, to be used for propagating.—G. SMITH."

[Your boiler A, and pipes c c, are as right as need be, but we can see no possible use whatever in having the second boiler; all that is needful there is a small expansion pipe, with a square or round box to hold the expanded water. You do not give the dimensions of them, nor of the greenhouse, nor of the pit. Hence, we cannot advise whether you will have heat sufficient from your inch-and-a-half pipes. We suspect not. Your idea of a hot-air chamber is very well; but why not carry a tin pipe from it all the way round the greenhouse; it would give out a large amount of heat, besides heating the boiler. You have two Argand burners of gas under the boiler. If the gas-flames rise up against the bottom, there must escape into the greenhouse more fumes of gas than would be good for the plants. To prevent this, go to some brazier, and get him to make you two copper cylinders, about eight inches long, and three in diameter, and two rims to fit the same; on the two rims, let him braze a cover of the finest copper-wire gauze he can get; put these two rims upon the two cylinders, and place them upon the gas-flame. Immediately, you will see the flame much reduced, the colour altered, and no carbonic fumes arising (yet the heat greatly intensified), so that no injury can possibly arise from the gas to the most delicate flowers. This we saw practically demonstrated lately, and can vouch for its truth. All the rest of your plan appears feasible enough. When your plants are growing, keep the top of the boiler (made like a saucer) full of water, to give off moisture into the air.]

VENTILATING A STOVE FERNERY.

"I have just built a small stove for Ferns, about ten feet long, by eight feet wide, inside; all the glass is fixed, and the ventilation provided for, by an opening to the front in the brick-work immediately under the glass, thirty inches wide, by seven inches high, and by two openings in the top of the wall to the back, one under each sash, about fourteen inches wide, by twelve high, all three openings provided with wooden shutters to the outside. I propose covering the back openings on the inside with a mesh—perforated zinc plate, fearing the north-west wind from the river Mersey, from which we are distant less than a-quarter-of-a mile, may be too boisterous and brackish for tender Ferns.

Will you kindly say if this ventilation will be sufficient for stove Ferns, what should be the average height of the thermometer? Most of the flue-covers are "dished," which, by keeping them full of water, will allow a constant steam to be kept up, if advisable. The Ferns will stand on a table, three feet wide to the front, and to the back of the stove in a box about the same width.—S. H. G."

[Correspondents like yourself, wishing for information on such important points as heating and ventilating, should be very explicit in stating full particulars of the size of the house or pit to which their queries refer. How is it possible for us to tell whether the openings you have made in the front and back wall are sufficient, as we do not know the height of your stove? If your house is not above ten feet high at the back, the air-openings will be quite sufficient. The precaution of covering the openings with a perforated zinc plate, to prevent the sudden rush of cold air, and to interrupt the saline particles that may be in it, owing to your place being so near the sea, is a good and useful idea. This plate, however, should be loose also, as well as the shutters, for removal in perfectly still, hot summer days, or when the wind blows towards the water. The heat for stove Ferns is, in *summer*, day-heat, 75° to 85°, night ditto, 60° to 65°; *winter*, day, 60° to 65°, night, 55°. For full particulars on Fern-culture, see back numbers of THE COTTAGE GARDENER.]

ORCHARDING—TIME IT NEEDS—EXPENSE OF PLANTING.

CLERICUS puts to us sixteen queries on this subject! of which we can this week only answer the two following:—

I. "Supposing that I am within 30 or 40 miles, by railway, of a good market, in a large city, do you think, that spending seven or eight hours per day on a fruit-garden of four or five acres, I could make it realize me £30 or £40 per year in the sale of its produce?"

[We shall suppose your Orchard to consist of dwarf bush-trees, planted at a distance of fifteen feet apart. We speak of dwarf bushes, because they come sooner into bearing; and we consider them best adapted for producing fine fruit, and less liable to suffer from high and cutting winds than standards are. Suppose, then, that you plant your ground with dwarf-trees, at a distance of fifteen feet apart, you will have 194 trees on an acre. In three or four years they will begin to bear; in six years they will produce a good crop, and in nine or ten years they will be in perfection. When in full bearing, it is estimated that on an average of years such an orchard produces 100 bushels of Apples per acre; which, taken at five shillings per bushel, would give the value of the produce of your five acres at £125. But from that sum you must deduct for gathering, carriage to market, and commission for selling, say eightpence per bushel, which, amounting to £37 10s., would leave you clear £88 10s., for the produce of your orchard. This, however, is the estimate when the trees have come to their full-bearing, and you cannot, therefore, expect to have such a return for eight years at least; but in the meantime you will have the produce of the minor fruits, such as Gooseberries, Currants, and Raspberries, with which the space between the rows of fruit-trees would be occupied, till the latter have attained their full growth. For the first year or two after the ground is ploughed, by devoting seven or eight hours daily, you might accomplish the management of such an orchard; but when the trees have come to their full size, and if you treat them as they ought to be treated, we imagine you will find, at some seasons, the work rather arduous, particularly if, as you hint in your subsequent queries, you intend to introduce the forcing of fruits under glass in addition.]

II. "What would be the cost of planting with the best kinds of espalier Apples and Pears, Apricots, Plums, Cherries, Currants, Raspberries, &c?"

[Apricots will not succeed on espaliers, nor in any situation in the open ground, so as to be relied on for a crop. There are instances, in the warm districts of the south and west of England, where the *Breda* and *Brussels*, and, sometimes, the *Turkey* and *Moorpark*, have borne fruit as

standards in favourable seasons; but such trees were not planted for profit. If you plant dwarf bush trees, the Apples, Pears, Plums, and Cherries, will cost you from £5 to £7 10s. per 100; the Currants from 30s. to 40s.; and the Raspberries from 12s. to 20s. per 100, according to the sorts; but if you buy trees already trained for espaliers, they will cost you from £10 to £15 per 100. Taking a large quantity, you may, no doubt, obtain them at lower prices than these; but we are supposing that you apply to a respectable nurseryman, who is careful what and how he cultivates, and who has his own reputation and your interest in view; and in taking such a step as you contemplate, you cannot be too careful in this particular, otherwise, when your trees come into bearing, and you take your fruit to market, you may have to rue that ever you planted an orchard.

We shall continue the answers next week.]

CHOICE PLANTS FOR A SOUTH WALL.— EMIGRATING.

"Please to name a few choice evergreen and deciduous shrubs for planting against a south wall at Clifton, that will stand the winter without protection, or with only a mat over them.

"Which colony do you recommend, New Zealand or Canada, for a gentleman, thorough master of modern agriculture and horticulture, who has a wife and nine children, of ages from two-and-a-half to twenty; girls and boys; all the elder were well-educated; the three eldest, two girls and a boy.—L. T."

[Of deciduous shrubs for the south wall, take *Spiræa Lindleyana*, the best hardy wall shrub we have. *Ceanothus azureus*, to be pruned as close as a red Currant bush every November, and to have a single mat over it in such winters as the last; *Ceanothus rigidus*, *papillosus*, *dentatus*, *divericatus*, and *verucosus*, all evergreens, and pretty well suited for a cold wall. *Forsythia viridissima*, deciduous; *Myrica Californica*, a kind of sweet Gale and evergreen; *Viburnum suspensum*, a kind of Laurustinus, evergreen, and to have a mat in winter till it gets old and hard in the wood. *Bignonia grandiflora major*, deciduous; to be pruned close, like a Vine; *Cydonia Japonica*, deciduous; *Robinia hispida*, or Rose Acacia, deciduous; *Wigelia rosea*, deciduous; the double crimson *Peach* and *Buddleia Lindleyana*, deciduous.

We never, purposely, advise *Emigrants* as to this or that colony, but there cannot be two questions as to the colony most suited to the gentleman you name. Let him not think of going to New Zealand, or to Australia. Canada is by far the most suitable of all our British Colonies for him and his family.]

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

SEEBRIGHT BANTAMS EGGS.—A Subscriber wishes to know where he can procure good ones.

NIGHTINGALE (A Subscriber from the first).—Apply to the bird dealers in St. Martin's Lane. Have you Bechstein on "Cage Birds"?

HOGG'S EDGING TILES (A Reader).—Write to Mr. Hogg, 13, Gilston Road, Brompton, and ask him to give you permission to make them.

AYRSHIRE COWS.—A Clergyman wishes to know where he can procure some of the true breed. We cannot tell why you failed in endeavouring to enlarge the plan, for we do not know how you went to work. If straight lines are struck through the centres of the circles on each side, and if you draw your plan quadruple, or any other arithmetical increase of the plan we had engraved, you ought to have no difficulty. If you find it insuperable, our artist will do it for you if you enclose five shillings worth of P.O. stamps.

NAME OF PLANT (M.W.).—The plant so abundant in Corsica, and of which you sent some very badly dried specimens, is, we think, the Mediterranean Heath, *Erica mediterranea*.

CALENDAR FOR APRIL.

ORCHARD AND FRUIT GARDEN.

APPLES, cleanse from blight; protect blossoms. APRICOTS, protect with care. CHERRIES, finish training. CURRANTS, finish dressing. DAMSONS may yet be planted; thin out the crowded spray in the interior. FIGS, remove all covering; prune at the end. GRAFTING, see that the clay is safe, and rub off wild spray betimes. GOOSEBERRIES, beware of the Caterpillar. INSECTS, check vigorously early. MULBERRIES may be planted. NECTARINES, see *Peaches*. PLUMS, finish pruning those which blossom on the young wood. PEARS, as *Plums*; protect blossoms. PEACHES, use the cleansing mixture named in former calendars; still protect, and disbud at the end. PRUNING of all fruit-trees may still be done, if neglected at proper time. RASPBERRIES, get tied if not done; top-dress. STRAWBERRIES, spring-dress if delayed. STAKING, attend to. TRAINING, complete in all fruits. WALNUTS may yet be planted. VINES, train and plant. Planting of all kinds may yet be done, implying, of course, neglect or omission at the best period. But every winter arrear must be brought to a close forthwith.

R. ERRINGTON.

FRUIT-FORCING.

AIR-GIVING, attend regularly to, avoiding cold draughts. BOTTOM-WARMS renew; 75° to 80° are safe points. CUCUMBERS, attend closely; stop often; use liquid-manure, and sustain a moist and warm air—70° to 85°. CHILIES and the CAPSICUMS, pot off and hasten. CHERRIES, avoid strong heat; keep a moist air. FIRES, moderate, according to season; let solar heat do its work. FIGS, much as *Peaches*, as to temperature, water frequently, and pinch young wood. FLOORS, wash down frequently. GRAPES, ventilate freely where ripening; remove crowded laterals; succession crops, follow up the usual routine of dishudding, stopping, training, and thinning. INSECTS, exterminate—Aphides by tobacco, Red Spider by sulphur. KIDNEY BEANS, apply liquid-manure, and get in successions. MELONS, keep thin in hine early, set blossoms, and stop and train weekly; provide successions. NECTARINES, as *Peaches*; pinching-off waste or watery shoots, remember. PEACHES, train, and top thin fruit. Use the syringe freely, and a free ventilation. Shading use occasionally in case of need. SYRINGE, do not lay it by; use it frequently; it is a capital cleanser, and an enemy to insects. STRAWBERRIES, attend to daily, water liberally, and give abundance of air, keeping down runners. TOMATOES, cool down ready for planting-out in the second week of May. VINES, attend well to in the ordinary routine of stopping, training, and herry-thinning; pray do not leave extra berries for a rubbishy tart or two. WATERING must be a daily affair now; every thing examined.

R. ERRINGTON.

ORCHID HOUSE.

AIR.—The days are now considerably longer, and the sun has more power, consequently more air will be required to keep the heat moderate. BASKETS, continue to renew, if not finished last month; dip them in tepid water once a week; put in baskets plants to ornament the house, such as *Aschlynanthus*, *Achimenes*, *Hoya bella*, *Agalmyla staminea*, and any other drooping freely-flowering plants. BLOCKS, syringe daily. DENDROBIUMS, and other plants in flower, remove into a cooler house; they will then last much longer in flower, but as soon as the bloom is over, return them into the warm house to finish their annual growth. HEAT.—As the plants will now be growing freely, they require the maximum of heat; in the Indian house, 75° to 90° by day, 65° to 70° by night; the Mexican house should be 10° lower. INSECTS will now multiply rapidly; use every means to extirpate them, and prevent their increase. POTTING, continue to all such as require it: the grand rule is to pot orchids as soon as new growths are apparent. SYRINGE freely in dull weather in the mornings only, but during sunny weather, syringe in the evenings also, shutting up the houses close previously to syringing; a moist growing atmosphere will be the consequence. WATER.—As the growths advance, increase the quantity of water at the root; dash it freely upon the platforms, walks, and walls daily, to keep up a large amount of atmospheric moisture.

T. APPELEY.

PLANT STOVE.

ACHIMENES, repot and divide, if required, the first potted batch; specimens may now be made, by placing several plants in a large shallow pot in leaf mould, chopped sphagnum, and turfy loam. AESCHYNANTHUS, pot and train to a globular trellis; these make fine showy plants. AIR, give freely on all favourable occasions. AMARYLLISES, pot and plunge in a hark-hed in a pit, to start them into flower and growth. BARK, renew, by sifting the old bark, removing the fine particles that pass through the sieve, keeping the rough in the pit, and adding sufficient fresh hark to raise it a little higher than the level; do not plunge the plants till the heat has moderated. CLIMBERS, dress, tie, and train neatly. HEAT.—Keep up a brisk heat by day, but more moderate during the night. IXORAS, attend to specimens of, and tie them out so as to form dense handsome hushes. MOISTURE, give to the air of the house by dashing water about upon the floors, walls, and hot-water pipes. POTTING, general; finish the first early in the month. RED SPIDER, and all other insects, diligently destroy; wash the flues or pipes with water and sulphur mixed together; lay it on with a whitewash brush. WATER, give abundance of to growing plants; keep every part clean and sweet; all decaying leaves remove, and syringe the leaves of the plants daily, especially as a day's bright sunshine.

T. APPELEY.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES will now be advancing fast into bloom; shade from bright sun, and shelter from heavy rains. CARNATIONS and PICOTEEs finish potting; shelter from severe weather. CHRYSANTHEMUMS, pot off cuttings put in last month; put in more cuttings b., keep them in close frames till fresh rooted. CINERARIAS coming into flower remove into the greenhouse; young plants re-pot; smoke frequently to destroy green-fly. CALCOLARIAS advance a stage by repotting; smoke these also; frequently the green-fly is their grand enemy. DAHLIAS, pot off cuttings; some that are scarce may yet have cuttings put in; give plenty of air to growing plants; old roots plant in borders towards the end of the month. FUCHSIAS, continue to increase by cuttings, if required; specimens of forms by repotting twice during the month; re-pot old plants; shake off a large portion of the old soil, and pot them in the same sized pots. HOLLYHOCKS, finish planting b.; mulch with short litter; sow seed in shallow pans in a gentle heat, or sow in open borders, or nursery beds. MIMULUSES, divide, and re-pot in light rich compost. PANSIES may yet be planted in beds; stir the surface of the soil of the beds planted last month. PINKS, cover bed with a thin mulching of very rotten dung, stirring the soil previously; sow seed of either in the open border, or in shallow pans. RANUNCULUSES; if the soil on the surface has become hard, stir it gently, breaking the clods with the fingers; keep a good look out for slugs, if they abound, give a good watering with lime-water. TULIPS; be very particular, and keep them well sheltered from late spring frosts, but expose them to all the favourable influences of mild rain, and the warm beams of the spring sun. WEENS, never allow to advance beyond the seed-leaf.

T. APPELBY.

FLOWER-GARDEN.

ANNUALS (Tender), prick out those sown in February and March into a hotbed; water gently but often; sow in hotbed; (Hardy) may be sown in borders, &c., to remain; thin those advancing. AURICULAS in bloom, shelter. (See HYACINTHS.) Supply with water often; those for seed, plunge pots in a sheltered border, where they can have sun until 11 o'clock; plant offsets; propagate by slips; seedlings shade during mid-day. AURICULAS done flowering, place out-of-doors, and separate offsets. Box edgings may be made, and old taken up, slipped and replanted: clip Box edgings. BIENNIALS, finish sowing, b.; plant out those sown last spring. BULBS, in water-glasses, done flowering, plant in pots, give liquid-manure every third time, very weak, and water often; stir the earth; sow, c.; plant into borders, h. CLIMBING plants, train and regulate. Layer RHODODENDRONS and hardy AZALEAS. DAHLIAS, plant to remain, b.; or in pots, to forward in a frame until May. DRESS the borders, &c., indefatigably. FRAMES, raise by supporters at the bottom, as the plants within grow tall. GRASS, mow once a week, and roll oftener; trim edges; dress with earth if poor; and sow seeds, especially white and small yellow CLOVER. GRAVEL, turn and lay afresh in dry weather; roll after rainy weather often. HOEING and RAKING walks give up, and lay them down in concrete. HYACINTHS, shelter from sun by an awning of matting over the beds, from nine to four; give the same shelter in bad weather day and night; cut flower-stalks as they cease blooming, and take special care of leaves. INSECTS, destroy with tobacco-smoke, or hellebore powder, or dusting of Scotch snuff. MIGNONETTE, sow in any warm border. MULCH, put round trees newly planted. PINKS, sow. POLYANTHUSES, sow; plant out and propagate by offsets, b.; last year's seedlings now in bloom, mark best for propagating. POTTED PLANTS, give fresh earth to, if not done last month: shift into larger; water freely. PERENNIALS, those sown last spring may still be planted, and propagated by offsets; finish sowing. STICKS are required to blooming plants. TULIPS, shelter from sun and wet; take off pods to strengthen bulbs. WATERING is now required more frequently, yet moderately; give it early in the morning. RANUNCULUSES, water freely, and press the earth very hard between the rows. ROSES, thin buds where very abundant: watch for grubs in the buds, and crush them; make cuttings of *Gloire de Rosamère* to bed next year. TOBACCO WATER, use to destroy the aphides, by dipping the shoots in it where the insects are. Prepare for a large stock of common CAPSICUMS to supersede tobacco for killing insects. Take stock of your BENDING STUFF, b.; and bring up arrears, if any; keep all such rather dry, and inure to cold in time.

D. BEATON.

GREENHOUSE.

AIR, admit freely in mild weather; give sparingly when east winds prevail, and then merely by the top-sashes, to avoid cold draughts; shut up early in the afternoon, and, if sunny, sprinkle the plants from a fine syringe, when it is desirable to encourage growth: plants making their growth should, therefore, if possible, be kept apart from those in bloom. AZALEAS, coming into and in flower, water freely; those to be retarded remove to a north aspect, under glass, or even an opaque roof; a temporary protection by mats, canvass, or oiled cloth, will answer admirably. BULBS, introduce. CAMELIAS, water freely when in flower; those done flowering keep close, to encourage growth, and shortly afterwards re-pot if necessary. CALCOLARIAS, CINERARIAS, PRIMROSES, CYTISUS, &c., assist with manure-water, weak, but given often. CACTUS, the late kinds water at the roots, after swelling the stems by syringing. CONSERVATIVE-WALL PLANTS prune, train, and protect, more to keep off the sun at first than the cold. CUTTINGS, insert; place in hotbed or shady place according to kinds. CLIMBERS, regulate. EPACRIS and HEATHS done flowering, cut back, and also any other straggling plants, and keep them by themselves, so as to be close and warm, to encourage them to break freely; those in, and coming into flower, keep in the airiest part. For winter blooming of the reddish-tinted kinds of Epacris, none excels the *impressa*; *hyacinthiflora* has much larger flowers, but the colour is duller; do not be afraid to cut back such plants freely; and if you can give them a closer atmosphere, and 10° higher temperature than the

greenhouse, it will cause them to break better. FUCHSIAS, water the forward ones freely; fumigate with tobacco at the first appearance of fly. GERANIUMS, train the first, encourage the second, and stop, pot, and propagate for autumn supply. GESNERA, especially Zebrina, and GLOXINIA, various varieties, start in a hotbed; the sorts may be kept safely during winter, if dry, in a temperature of from 40° to 45°. This rule applies to the whole of the Achimenes, and most plants with scaly and bulbous tubers. Those who have pits and frames, and no greenhouse, may manage them nicely by packing them in a kitchen cupboard. Few things answer better for window plants in summer and autumn. HEATHS, in bloom and growing, keep in the coolest and airiest part of the greenhouse, and if the sun shines strong, defend the pots by shading or double pots; the *Hovea* and *Chorozema* tribes will require similar care, and then, with good drainage and plenty of water, there will be no danger. Prepare for general ROTTING by getting soil, pots, &c., in good order, but do not let a plant wait for a time when it wants attention. PROPAGATE by seed, roots, cuttings, inarching, and grafting; young plants thus get strong before winter. Sow SEEDS; beware of burying the smaller ones; the pots should be well watered previously, and when settled, the seeds sown, slightly sprinkled with a little sand, pressed down, and a square of glass or a piece of paper put over the pot; for these, as well as striking cuttings of tender plants, inarching, and grafting, a sweet hotbed would not be desirable. SEEDLINGS, remove as soon as possible from the seed-pans, and pick them out singly, especially if thick. Sow Balsams, Cockscombs, Thunbergias, &c. Pot the various Achimenes, and introduce tubers for a succession. Remove decayed LEAVES. Stir and loosen the surface soil. SUCCULENTS of all kinds water more freely. WATER for all plants will now be required oftener. MANURE-WATER may now be given more frequently to Pelargoniums that have set their flower-buds, to all plants where vigorous growth is required in pots, and in all cases of plants for vases, beds, &c. where it is desirable, they should be as large as possible by the middle of May. VINES on rafters, train. STRAWBERRIES, set in; even a few on a shelf is a great luxury, and where the vine is scarcely forced, where greenhouse temperature is merely maintained, with a rise from sun heat during the day, the fruit may be obtained a month earlier than in the open air; keep the plants rather dry until the flower trusses show themselves boldly, then water freely.

R. FISH.

KITCHEN-GARDEN.

Let the head and the hands work together; to be on the alert to any sowings that ought to have been performed last month. ALEXANDERS, sow, b. ANGELICA, sow, or plant out autumn-sown. ARTICHOKEs, plant and dress off. ASPARAGUS, sow or plant; dress off beds, b.; attend that in forcing, water with liquid-manure-water once a week. BALM, plant. BASIL, sow main crop on gentle hotbed. BEANS, plant in succession; attend to earth-stirring the growing crops. BEET, of either kind, sow, m. BORECOLES, sow, and leave for seed. BROCOLI, sow main crops, m.; attend to pricking-out any early sown, and save for seed. BORRAGE, sow, and earth-stir autumn-sown. BURNET, plant or sow. CABBAGES, sow, plant, or prick out, and earth-stir often. CAPSICUMS; sow in hotbed, or prick out three plants in each pot, while in the seed-leaf, and forward them in hotbed. CARDOONS, sow, e. CARRAWAY, sow. CARROTS, sow main crops, m.; attend to thinning early frame or other crops, also to watering in dry weather; this, and frequent earth-stirring, will forward their growth much. CAULIFLOWER, sow, prick, or plant out; attend to earthing-up the hand-glass crops, and assist them with soakings of manure-water. CELERY, sow for late crops, m.; and attend to pricking or planting-out early sown; save for seed. CHAMOMILE, plant. CHIVES, plant. CHERVIL, sow; save for seed. COLEWORTS, plant. CLARY, sow. CRESS, (American), sow in succession. CUCUMBERS, sow for hand-glass and other crops; ridge out and attend to those in bearing, as to thinning-out and top-dressing, or earthing-up. DILL, sow or plant. DUNG for hotbeds, prepare. EARTH-STIRRING, particularly attend to in dry weather. FENNEL, old plants divide, and plant or sow. GARLIC, plant, if not done, b. HORSEADISH, plant without delay. HOTTHENS for all purposes, attend to. HYSSOP, sow or plant out old roots. JERUSALEM ARTICHOKEs, plant without delay. KALE (SRA), sow or plant, b.; carefully fork over old beds. KIDNEY BEANS (DWARF,) sow, b., where hand-glasses are at command; if not, sow, e.; and *Scarlet Runners*, e. LAVENDER, plant. LEEKS, sow, b. LETTUCES, sow in succession once a fortnight, and plant out; earth-stir among often. MARIGOLD, sow. MAJORAM (*Sweet*), sow main crop on gentle hotbed; (*Common Garden*), plant. MELONS, sow in succession; pot off; ridge out; attend to topping and thinning-out, weekly, the early crops. MUSTARD and CRESS, sow in succession, where required. MUSHROOM-BEDS, make, and attend to. NASTURTIUMS, sow. ONIONS, sow main crop, b., if not done before. UNDEGROUND OR POTATO ONION, plant without delay, also the TREE ONION. PARSLEY, sow of either kind; leave for seed. PARSNIPS, sow without delay. PEAS, sow in succession; attend to sticking, &c.; let them be well hoayed up before sticking on light soils, to aid the watering. PENNY ROYAL, plant in a cool situation. POTATOES in frames, attend to. RADISHES, sow in succession; attend to thinning young crops. RAPE, sow. RHUBARB, sow or plant; bring forward by inverted pots or tubs over old crowns. RUE, plant. SAVOYS, sow. SALSAFY, sow main crop, e. SCORZONERA and SKIRRETS, sow, e. SHALLOTS, finish planting, b. SORRELS, plant. SPINACH, sow once a fortnight; thin out; and leave for seed. TANSEY and TARRAGON, plant. TOMATOES, sow in hotbed, and prick out in pots, and forward in hotbed. THYME, divide old roots, and plant out. TURNIPS, sow, b. and e.; leave for seed. VEGETABLE MARROW, sow in hotbed. WORMWOOD, plant.

T. WEAVER.

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